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Summary of Fish Mercury Data Collected from Lakes on the Rat — Burntwood and Nelson River Systems, 1983 - 1985

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ABSTRACT

Observations of sudden elevated muscle mercury levels in commercial fish catches from the Rat - Burntwood River (Churchill River Diversion) lakes in 1978 prompted efforts to examine the underlying causes. Detailed studies were initiated in 1982 under the Canada - Manitoba Agreement on the Study and Monitoring of Mercury in the Churchill River Diversion. This report presents the compilation and preliminary statistical analyses of fish mercury data collected under Project 3.3 (Mercury in Fish) of the Study Agreement from 1983 - 1985.

Although most of the fish mercury data were collected for lakes which were flooded by the Churchill River Diversion, mercury information was also obtained for flooded lakes on the Nelson River and several unflooded lakes connected to the Diversion. These data are presented in summary form in this report. Data summaries presented here also include some information on fish mercury levels collected as early as 1972.

TABLE OF CONTENTS

	Page
ABSTRACT	1
INTRODUCTION	1
METHODS	5
RESULTS	7
Netting	7
Mercury Levels	7
Effect of Flooding on Fish Muscle Hg Levels	12
Mercury and Fish Growth Rate	12
Muscle Hg - Liver Hg Relationships	16
LITERATURE CITED	17
ACKNOWLEDGEMENTS	18
APPENDICES	19

LIST OF TABLES

Table	Page
1. List of lakes with available fish muscle Hg data which were not flooded by the Churchill River Diversion Project	13
2. Comparison of water surface area increases and fish muscle Hg levels from the Churchill River Diversion lakes	15

LIST OF FIGURES

Figures	Page
1. Location of lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985	4
2. Location of lakes with available fish muscle Hg data which were not flooded by the Churchill River Diversion Project	14

LIST OF APPENDICES

Appendix	Page
1. List of scientific and common names of fishes referred to within this report	19
2. Netting locations and depths of sets in lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985	20
3. Catch summaries from standard gang nets set in lakes studied under Project 3.3 of the Canada Mercury Monitoring Agreement, 1983 - 1985	46
4. Average muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) found in the various fish species collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985	68
5. Average muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) for length interval categories of whitefish, walleye and northern pike information collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985 .	98
6. Scatter plots of muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) in relation to length and age of whitefish, walleye and northern pike data collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985 .	137
7. Regression coefficient (r^2) values for linear, exponential, and power regression functions determined from Hg data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985	252

Appendix

Page

8. Length - muscle Hg and age - muscle Hg regressions of whitefish, walleye and northern pike data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 . . 259
9. Regression lines of transformed ($\log_{10}$ length - $\log_{10}$ muscle Hg) Hg data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 262
10. Analysis of covariance comparisons for whitefish, walleye and northern pike length - Hg data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 . . 272
11. Distribution of length vs muscle Hg data points relative to the 95% confidence interval about the $\log_{10}$ regression lines for selected lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985 276
12. Standardized muscle Hg levels (by regression analysis) of whitefish, walleye and northern pike data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 . . 319
13. Standardized muscle Hg levels (by coefficient) of whitefish, walleye and northern pike data collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985 322

14. Standardized muscle Hg levels (by coefficient) of whitefish, walleye and northern pike information collected from non - flooded lakes occurring in the same or adjacent major drainage basins as those lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 327
15. Graphical representation of standardized annual muscle Hg levels (by coefficient) for whitefish, walleye and northern pike information collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985 331
16. Comparisons of muscle Hg data collected from flooded and non - flooded lake occurring within the major drainage basins located around the Rat - Burntwood and Nelson River systems, 1972 - 1985 340
17. Comparisons between ranking the amount of flooding and increasing muscle Hg levels of whitefish, walleye and northern pike information collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 344
18. Growth rate influences on muscle Hg accumulation rates of whitefish, walleye and northern pike data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985 . . . 348

Appendix

Page

19. Relationship between liver and muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) of whitefish, walleye and northern pike data collected from the Rat - Burntwood River Systems lakes, 1983 - 1985	352
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INTRODUCTION

The Rat - Burntwood River system is one of the more recent areas that has been flooded by hydroelectric development in Manitoba since the mid - 1970's. Flooding within this system began in 1974 with the closure of the Notigi Control Dam. Churchill River water from Southern Indian Lake (South Bay) was diverted to the Rat - Burntwood system in 1976 via a man-made channel. This channel was cut between South Bay and Issett Lake, the shortest distance dividing the Churchill River and Nelson River drainage basins in Manitoba. Most of the flow of the Churchill River was diverted down the Rat - Burntwood River into the Nelson River. Damming of the Rat River at Notigi Lake and the greatly increased flows have caused some lakes on the diversion route to double or even quadruple in area. Flooded forest cover constitutes much of this newly formed water area.

Since 1970, all Manitoba lakes that are commercially fished have been routinely inspected by the Canada Department of Fisheries and Oceans in Winnipeg for mercury (Hg) contamination. Regular checks on commercial fish from the Rat River lakes (e.g. Rat, Mynarski, Notigi and Wapisu) shortly after the Churchill River diversion went into effect revealed elevated Hg levels in predatory fish. Similar circumstances were witnessed in Southern Indian Lake following its impoundment (Bodaly and Hecky 1979). Hg levels in walleyes and northern pike from the Rat River lakes were so high (in excess of $1.0 \mu\text{g}\cdot\text{g}^{-1}$) that they could not be marketed and commercial fishing on the lakes was discontinued in 1978.

Concerns over the elevated Hg levels in fish from Southern Indian Lake and the Rat River lakes and the possible health hazard posed to people living in these areas lead to the development of the Canada - Manitoba Agreement on the Study and Monitoring of Mercury in the Churchill River Diversion. Although some work had already begun in 1982, this Agreement was officially signed on March 10, 1983. In the formulation of this Agreement, four major study programs were identified. These were:

1. Research and monitoring of source mercury and its mobilization to aquatic food chains.
2. Research and monitoring of bio-accumulation of mercury by aquatic food chains.
3. Research and monitoring of mercury levels in fish and other animals and consequence of human consumption.
4. Information and management.

Various studies or projects were further identified under each of these programs. Data presented in this report deals with Project 3.3 (Mercury in Fish) which falls under Program 3. The principal objective of Project 3.3 was to sample several fish species (i.e. those commonly or occasionally consumed by local residents) from:

- a) selected areas on the Churchill River Diversion route,
- b) areas where communities along the Diversion route may obtain fish for domestic consumption, and
- c) lakes unaffected by Diversion waters.

This report presents data summaries and statistical analyses of fish Hg information collected from the Rat - Burntwood River system lakes downstream of Issett Lake and Nelson River lakes from Sipiwesk to Stephens Lake. Figure 1 shows the location of the lakes considered in this study. Excluded from this report are Issett and Southern Indian lakes, which were monitored by the Department of Fisheries and Oceans.

Most of the emphasis in the present report is on fish muscle Hg data collected between 1983 - 1985 by the Manitoba Department of Natural Resources. Any available fish survey Hg data that were collected from the study area lakes prior to 1983 were also considered in this report; these data were obtained from the Department of Fisheries and Oceans.¹ The purpose of this report is to present a summary of the presently available fish Hg data collected from lakes within the Churchill River Diversion area and the Nelson River, as well as a compendium of statistical analyses. Detailed evaluation and discussion of results will be presented in a subsequent report.

¹ Length, weight, and Hg information from individual fish sampled during this project (1983 - 1985) and other reported Hg data (i.e. 1972 - 1982) is available from the Canada Department of Fisheries and Oceans Freshwater Institute, 501 University Crescent, Winnipeg, Manitoba.

N.B. Data used in this report are stored on 8 x 8 floppy discs suitable for use on a Hewlett Packard 9830 A desk top computer.

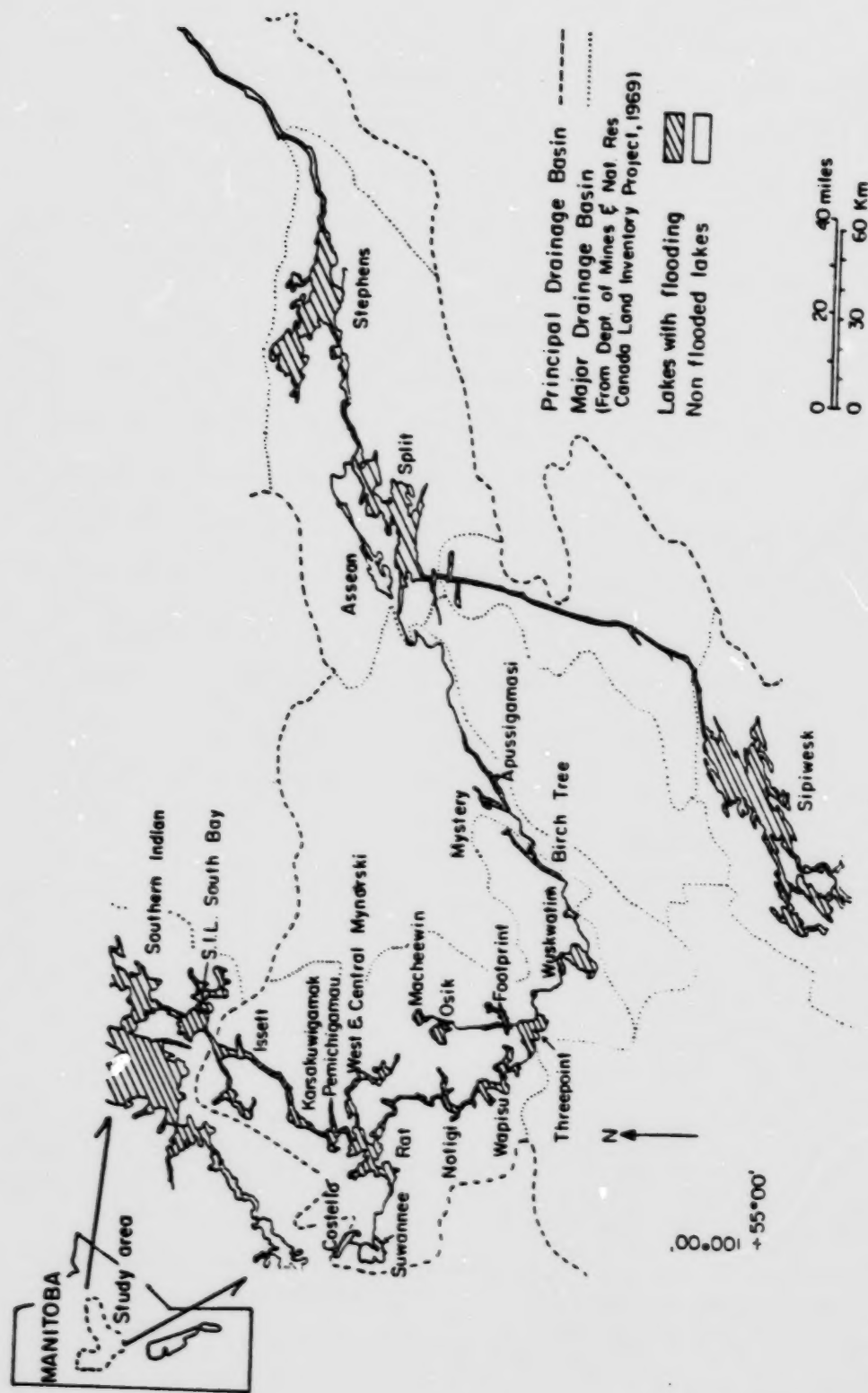


Fig. 1. Location of lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985. Southern Indian and Issett lakes data were not included in this report as they were monitored by Canada Department of Fisheries and Oceans, Winnipeg.

METHODS

Standard gangs of multi-filament nylon gillnets were used to collect fish for Hg analysis. The standard gang consisted of six nets of differing mesh size. The mesh size used were: 3.8 cm (1.5"), 5.1 cm (2.0"), 7.6 (3.0"), 9.5 cm (3.75"), 10.8 cm (4.25") and 12.7 cm (5.0") stretched measure. Each net was 22.9 m (25 yd) long and 1.8 m (6 ft) deep. Gillnet sets were made on the bottom and overnight, usually of 16 - 20 h duration.

Fork length and round weight measurements were recorded for all fish being sampled for Hg. Sex and state of maturity were recorded and ageing structures were taken from the principal commercial fish species (i.e. lake whitefish, walleye, sauger and northern pike). Ageing structures collected varied depending on the species and were as follows: otoliths and first three pectoral fin rays from whitefish, otoliths and first three dorsal spines from walleyes and saugers, and the left cleithrum and first three pectoral fin rays from northern pike. Fish chosen for Hg testing were selected at random, but some effort was made to include fish caught in all mesh sizes and from as wide a size range as possible. Whenever possible, the number of fish sampled for Hg from each lake in each year were 50 specimens per species for whitefish, walleye, sauger and northern pike and 30 specimens of any other species caught.

Approximately 5 - 10 g of axial muscle and liver tissue was taken from each specimen for Hg testing. Muscle tissue samples were taken consistently each year. The sample was removed from the area above

the lateral line and just anterior to the caudal peduncle. Liver tissue samples were taken from all species in 1983, all but suckers (Catostomus and Moxostoma spp.) in 1984, and only from whitefish, walleyes and pike from selected lakes in 1985. The liver tissue sample was generally removed from the posterior tip of the largest lobe. The liver tissue sample was placed in a separate Whirlpac bag which was then placed in the Whirlpac bag containing the muscle sample from the same fish. Sample number and the fish's length and weight were recorded on the outer bag with a felt marker pen. Tissue samples were kept on ice and frozen as soon as possible after collection. Samples were submitted to the Freshwater Institute for Hg analysis. Hg testing was done by cold vapour atomic absorption spectro-photometry (Hendzel and Jamieson 1976).

The extent of flooding on the lakes under study was measured from differences between pre- and post-impoundment water surface areas. Water surface areas were taken from 1:50,000 scale topographic maps made prior to and after the diversion and were calculated using a High State precision coordinate digitizer.

Regression and covariance analyses were conducted as described by Snedecor and Cochran (1967). Fish growth information used was asymptotic length (L_{∞}) as described by Walford (1946) and Brody's growth coefficient (k) outlined by Brody (1927).

RESULTS

Data presented in this report have been arranged according to lakes which are listed in an upstream to downstream order. Lakes which are not situated on the main river channel (e.g. Suwannee Lake) have been placed before the mainstem lake (for this example, Rat Lake) into which they flow. The Rat - Burntwood River lakes are presented first, followed by the Nelson River system lakes.

Scientific and corresponding common names of fish species referred to throughout this report are listed in Appendix 1.

Netting

Locations and depths of gillnet sets for lakes sampled during the Hg monitoring project from 1983 - 1985 are presented in Appendix 2. The catches of all species caught in individual gillnet sets are presented in Appendix 3.

Mercury Levels

Summaries of mean fork lengths (mm), mean weight (g), mean muscle Hg concentrations and range in muscle Hg content ($\mu\text{g}\cdot\text{g}^{-1}$ wet wt) for each species caught from the various study lakes are given in Appendix 4. Also presented are available muscle Hg survey data collected from these lakes prior to 1983. Data collected before 1983 came from the Department of Fisheries and Oceans integrated files of commercial inspection and mercury survey data. Only the latter data were used since they included statistics on length and weight, as well as Hg levels

of individual fish. The Hg survey samples were obtained either from experimental gillnet catches made by the Province or from random checks of commercial fish catches delivered to the Freshwater Fish Marketing Corporation in Winnipeg (G. McGregor, pers. comm.).

Average muscle Hg levels in whitefish, walleyes and northern pike for various length interval categories are presented in Appendix 5. These groupings were used in an attempt to minimize the effects any large year-to-year variations in the average size of fish in the samples might have on the corresponding mean Hg levels.

Scatter plots showing the relationship of muscle Hg to length and age in whitefish, walleyes and northern pike are presented in Appendix 6. Data gathered prior to 1983 are also included in these scatter plots.

Hg data on whitefish, walleye and pike were chosen for comprehensive evaluation for several reasons. Firstly, these three species were the most important commercial species present in all lakes sampled. Secondly, they were generally the most dominant species in the large-fish communities in all lakes. Finally, walleye and northern pike were usually the only species for which there was a reasonably good pool of pre-1983 Hg data.

Other fish species that appeared to be abundant in some lakes were cisco and sauger. In these cases, generalizations made on muscle Hg levels in whitefish appear to apply to ciscoes, while it is considered that Hg information for walleyes would be similar to that for saugers. However, sauger muscle Hg concentrations tended to be higher, probably because saugers are older than walleyes at comparable sizes. A detailed

evaluation was not done of the sauger data because saugers were only abundant in a few of the sampled lakes and they were not represented by a wide size range of fish. Most saugers were caught in the 3.8 and 5.1 cm mesh gill nets.

The correlations between Hg content of fish muscle versus the size (fork length and weight) and age of fish were calculated using the linear, exponential and power functions. These correlations were determined only for whitefish, walleyes and northern pike. The resulting regression coefficients or r^2 values (Appendix 7) were examined to determine which factor (size or age) and mathematical function provided the best correlation with muscle Hg content. Following this analysis, regressions of age and length versus muscle Hg were again determined, but in this case after data had been transformed to $\log_{10}$ values. Equations for these regressions are presented in Appendix 8. The regression lines for the transformed length - muscle Hg data are illustrated in Appendix 9.

Although age generally gave a better correlation with muscle Hg content, muscle Hg was related primarily to fish length for the following reasons. Length and Hg information was available on fish samples collected prior to 1983, while reliable age data was only available on the 1983 - 1985 samples. Furthermore, length, unlike weight, is least affected by seasonal influences such as spawning condition and is therefore more comparable between years.

Comparisons of regressions using analysis of covariance provided results which in some cases indicated statistically significant differences between years (Appendix 10). However, some of these significant differences could not be explained or may have resulted from

inadequate sample size or composition. Before 1983, many of the fish Hg samples collected in the study area either contained too few fish or fish of a limited size range and provided questionable regressions. Therefore, in order to verify statistical differences, visual comparisons of the distribution of individual data points relative to the 95% confidence intervals about the $\log_{10}$ regression lines were made. This information is shown in Appendix 11 for selected lakes. Information from other lakes not shown here provided similar results.

A further comparison of muscle Hg levels within a species between years and areas was made using a standardized Hg level for a common or specified size of fish. Common fish sizes chosen were fork lengths of 350, 400 and 550 mm for whitefish, walleye and northern pike, respectively. These lengths reflected the approximate modal sizes of these species caught by 7.6 - 12.7 cm mesh gillnets from all lakes in the study area.

Muscle Hg levels for the above sizes were standardized by two methods. The first method was by using the length vs Hg regression equations. The appropriate size was substituted into the pertinent equation to derive the standardized Hg value. Standardized muscle Hg levels for the 1983 - 1985 samples of whitefish, walleye and pike are presented in Appendix 12. The benefit of standardizing Hg levels by this method was limited since it did not permit comparisons with years in which the regressions between size and Hg were either negative or non-significant because of inadequate samples.

The second method of standardizing Hg levels was by derivation of a coefficient which was then multiplied by the appropriate common

size. The coefficient for each species was the quotient of the weighted mean muscle Hg level divided by the weighted mean fork length. Muscle Hg levels used to derive the coefficients were taken only from those fish within specified size categories. These size ranges were: 300 - 400 mm for whitefish, 350 - 450 mm for walleyes and 500 - 700 mm for northern pike. Selection of these size categories took into consideration the age span of each species as well as the standard fork lengths of 350, 400 and 550 mm. Age ranges within the above size categories were as follows: 4 - 10 years for whitefish, 10 - 15 years for walleyes and 5 - 10 years for pike.

Muscle Hg levels standardized by coefficient for whitefish, walleye and northern pike samples from flooded and unflooded lakes are presented in Appendices 13 and 14, respectively. Graphical representations of annual levels from lakes studied under Project 3.3 are illustrated in Appendix 15.

Standardization of muscle Hg levels using coefficients provided an alternate method of equating Hg levels to a common denominator, which allowed for more consistent comparisons between the 1983 - 1985 data collected under Project 3.3 and other data collected from non-flooded lakes. In the latter case, the samples were usually too small (generally 5 - 10 fish) and limited to those sizes vulnerable to commercial gillnets. These samples were frequently inadequate for regression analysis.

Effect of Flooding on Fish Muscle Hg Levels

Comparisons between muscle Hg levels of whitefish, walleye and northern pike from flooded and non-flooded lakes occurring within the same or adjacent major drainage basins are presented in Appendix 16. Mean muscle Hg levels shown in Appendix 16 were the result of combined muscle Hg levels from all lakes located within a particular drainage basin. Standardized muscle Hg levels that were used for flooded and non-flooded lake data came from Appendices 13 and 14, respectively. The names and locations of the non-flooded lakes are given in Table 1 and Figure 2, respectively.

Table 2 shows surface water area increases and standardized muscle Hg levels (based on regressions from most recent years data). Correlations that indicated greater flooding was related directly to higher muscle Hg levels were hard to detect. Rank correlations were attempted in order to clarify any relationship (Appendix 17). Ranking was done by assigning number one to the lowest amount of flooding or the lowest muscle Hg level in Table 2, with consecutively higher numbers assigned as Hg levels or percent flooding increased. Identical levels received the same rank.

Mercury and Fish Growth Rate

Illustrations of fish growth rate effects on muscle Hg rates of accumulation are presented in Appendix 18. The natural log of asymptotic length (1∞) times Brody's growth coefficient (k) was done to minimize variability in the growth parameters which may be caused by varying mesh sizes.

Table 1. List of lakes with available fish muscle Hg data which were not flooded by the Churchill River Diversion Project. See Figure 2 for locations.

Lake		Principal drainage area name	Major drainage area number *
Name	No.		
Uhlman	1	Churchill River	1
Waskaiowaka	2	"	2
Costello	3	Nelson River	3
Savannee	4	"	3
East Mynarski	5	"	3
Leftrock	6	"	3
Harding	7	"	4
Moak	8	"	4
Paint	9	"	5
Partridge Crop	10	"	5
Natawahunan	11	"	5
Branigan	12	"	5
Pikwitonei	13	"	5
Cross	14	"	6
Walker	15	"	6
White Rabbit	16	"	6
Landing	17	"	7
Cauchon	18	"	7
Bearhead	19	"	7
Goulet	20	"	7
War	21	"	8
Butnau	22	"	8
Assean	23	"	8
Crying	24	"	8
Limestone	25	"	9

* assigned number for this table only.

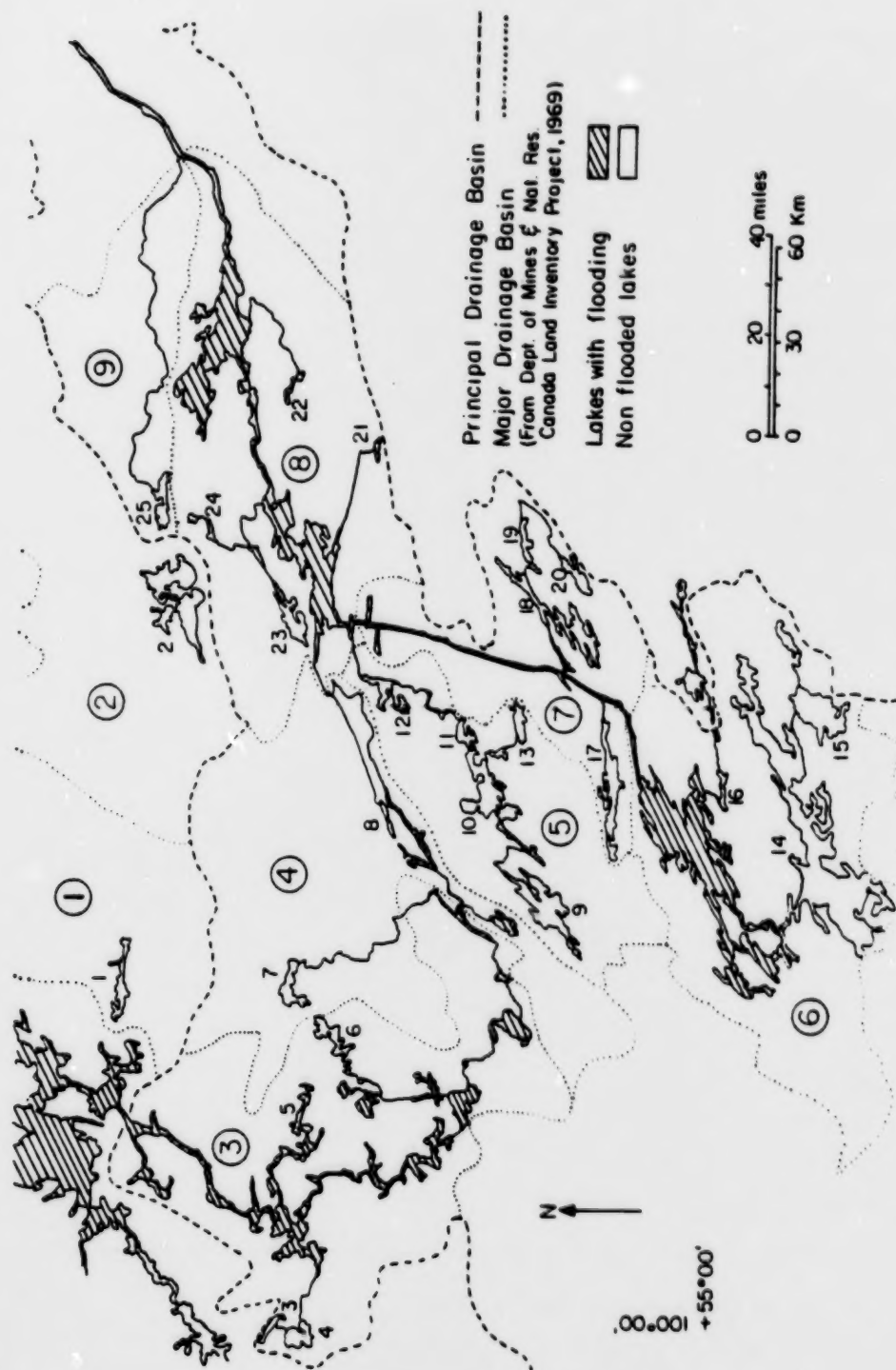


Fig. 2. Location of lakes with available fish muscle Hg data which were not flooded by the Churchill River Diversion Project. See Table 1 for list of names. Numbers circled refer to the major drainage basins.

Table 2. Comparison of water surface area increases and muscle Hg levels from the Churchill River Diversion lakes. Mercury level based on a standard sized fish for each species and respective regression analysis for the most recent years data.

Name	Lake			Hectare increase	% increase	Mercury level ($\mu\text{g}\cdot\text{g}^{-1}$)				
	Pre-impoundment	Post-impoundment	Area (ha)			Most recent years data	350 mm Whitefish	400 mm Walleye	550 mm Northern pike	
Karskuwigamak	1,788	3,868		2,080	116	1984	0.22	1.96	1.41	
Pemichigamau	2,018	3,937		1,919	95	1985	0.22	1.47	1.19	
Mynaraki*	1,963	3,631		1,668	85	1984	0.10	0.92	0.80	
Costello**	1,495					1985	0.04	0.37	0.33	
Suwannee**	4,945					1985	0.03	0.11	0.21	
Bat	7,881	16,405		8,524	108	1985	0.21	1.52	1.34	
Notigi	1,742	9,095		7,353	435	1985	0.28	1.19	1.39	
Vapiu	4,478	5,921		1,443	32	1985	0.38	1.56	1.53	
Macheewin	1,268	1,288		20	2	1984	0.06	0.40	0.55	
Oak	2,256	2,607		351	16	1984	0.17	0.91	1.25	
Footprint	2,035	2,807		772	38	1985	0.14	1.14	1.27	
Threepoint	4,494	6,626		2,132	47	1985	0.23	1.22	1.27	
Wuskwatia	4,789	4,907		118	2	1984	0.18	0.68	1.42	
Birch Tree	456	627		171	38	1985	0.26	1.51	1.09	
Mystery	904	1,166		262	78	1983	0.17	0.65	0.95	
Apusigamasi	1,433	2,235		802	64	1984	0.28	1.53	1.25	
Sipiweak		34,570 ¹			202	1983	0.04	0.87	0.48	
Split	27,939	27,960		21	<1	1984	0.07	0.43	0.31	
Stephens	8,882	29,898 ³		21,016	237	1984	0.19	0.81	0.87	

* Mynaraki Lake refers to West/Central Mynaraki.

** not flooded

¹ From Canada Inland waters directorate.

² pers. Comm., Dennis Windsor, Manitoba Hydro.

³ includes old Moose Lake Basin plus old Nelson River channel presently within Stephens Lake Boundaries.

Muscle Hg - Liver Hg Relationship

Relationships between whitefish, walleye and northern pike muscle and liver Hg levels are given in Appendix 19. Some data, the 1985 in particular, are unavailable at time of printing.

LITERATURE CITED

- Bodaly, R. A. and R. E. Hecky. 1979. Post-impoundment increases in fish mercury levels in the Southern Indian Lake Reservoir, Manitoba, Canada. Can. Fish. Mar. Serv. Manuscr Rep. 1531, 15pp.
- Brody, S. 1927. Growth rates. Univ. Missouri Agric. Exp. Sta. Bull. 97.
- Hendzel, M. R. and D. R. Jamieson. 1976. Determination of mercury in fish. Anal. Chem. 48(6):926-928.
- Snedecor, G. W. and W. G. Cochran. 1967. Statistical Methods. 6th Ed., Iowa State Univ. Press, Ames Iowa. 593 pp.
- Walford, L. A. 1946. A new graphic method of describing the growth of animals. Biol. Bull. 90:141-147.

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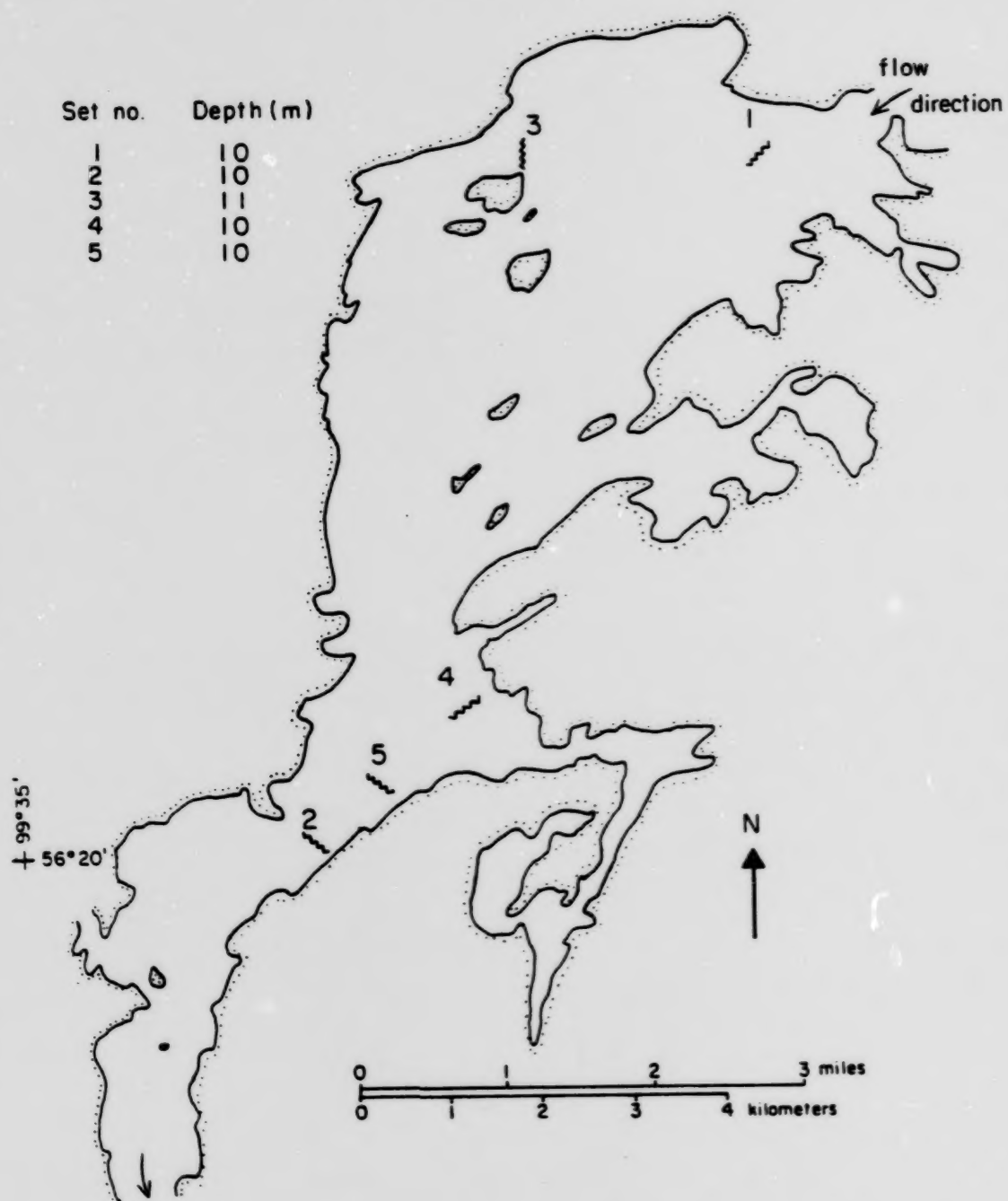
Special appreciation is expressed to M. Hendzel of the Freshwater Institute for her assistance in providing fish mercury information and her help in editing of data collected between 1983 - 1985.

Mr. W. Lysack and Mr. A. J. Derksen provided assistance in data preparation. M. McTaggart typed this manuscript.

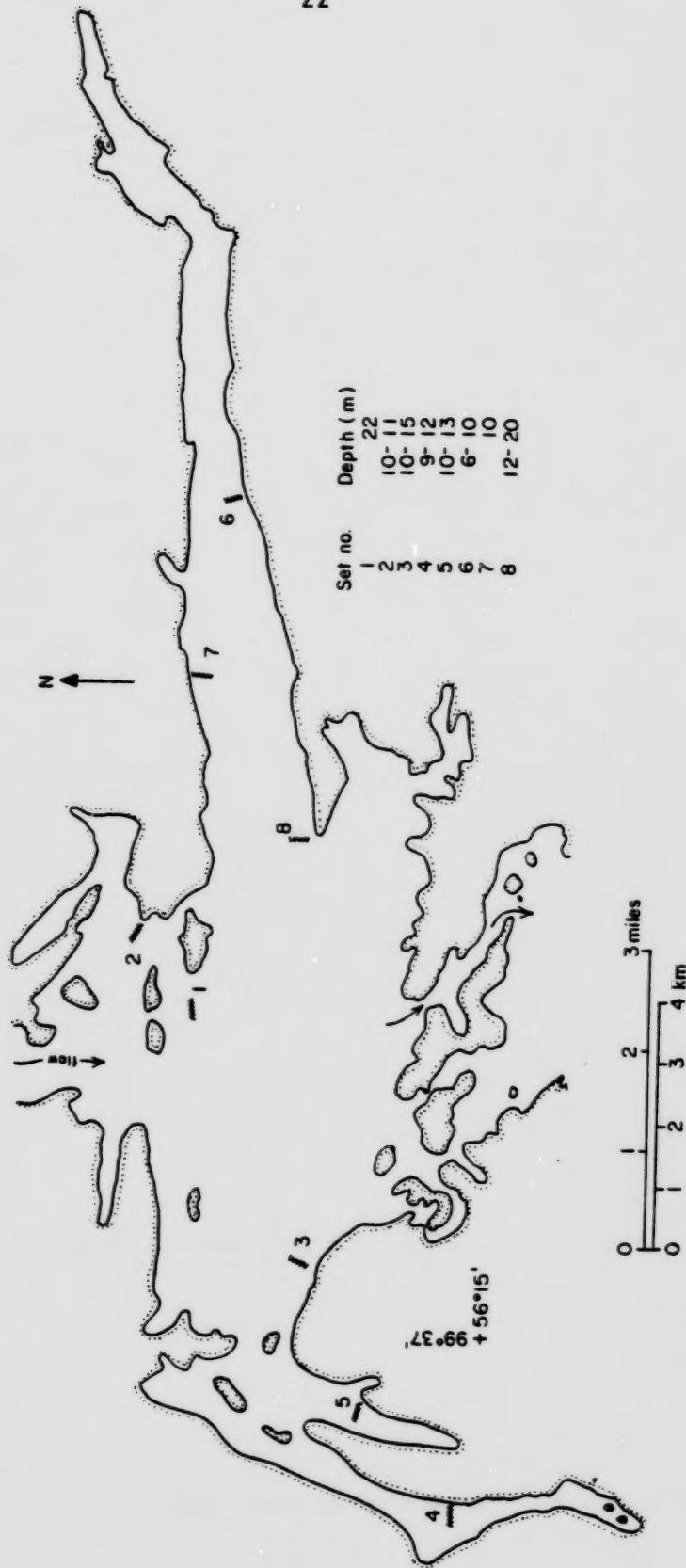
Appendix 1. List of scientific names corresponding to common fish names referred to within this report.

Common Name	Scientific Name	
Whitefish	<u>Coregonus</u>	<u>clupeaformis</u>
Walleye	<u>Stizostedion</u>	<u>vitreum</u>
Sauger	<u>Stizostedion</u>	<u>canadense</u>
Northern pike	<u>Esox</u>	<u>lucius</u>
Cisco	<u>Coregonus</u>	<u>artedii</u>
White sucker	<u>Catostomus</u>	<u>commersoni</u>
Longnose sucker	<u>Catostomus</u>	<u>catostomus</u>
Shorthead redhorse sucker	<u>Moxostoma</u>	<u>macrolepidotum</u>
Yellow perch	<u>Perca</u>	<u>flavescens</u>
Trout perch	<u>Percopsis</u>	<u>omiscomaycus</u>
Mooneye	<u>Hiodon</u>	<u>tergatus</u>
Goldeye	<u>Hiodon</u>	<u>alosoides</u>
Freshwater drum	<u>Aplodinotus</u>	<u>grunniens</u>
Burbot	<u>Lota</u>	<u>lota</u>
Lake chub	<u>Couesius</u>	<u>plumbeus</u>

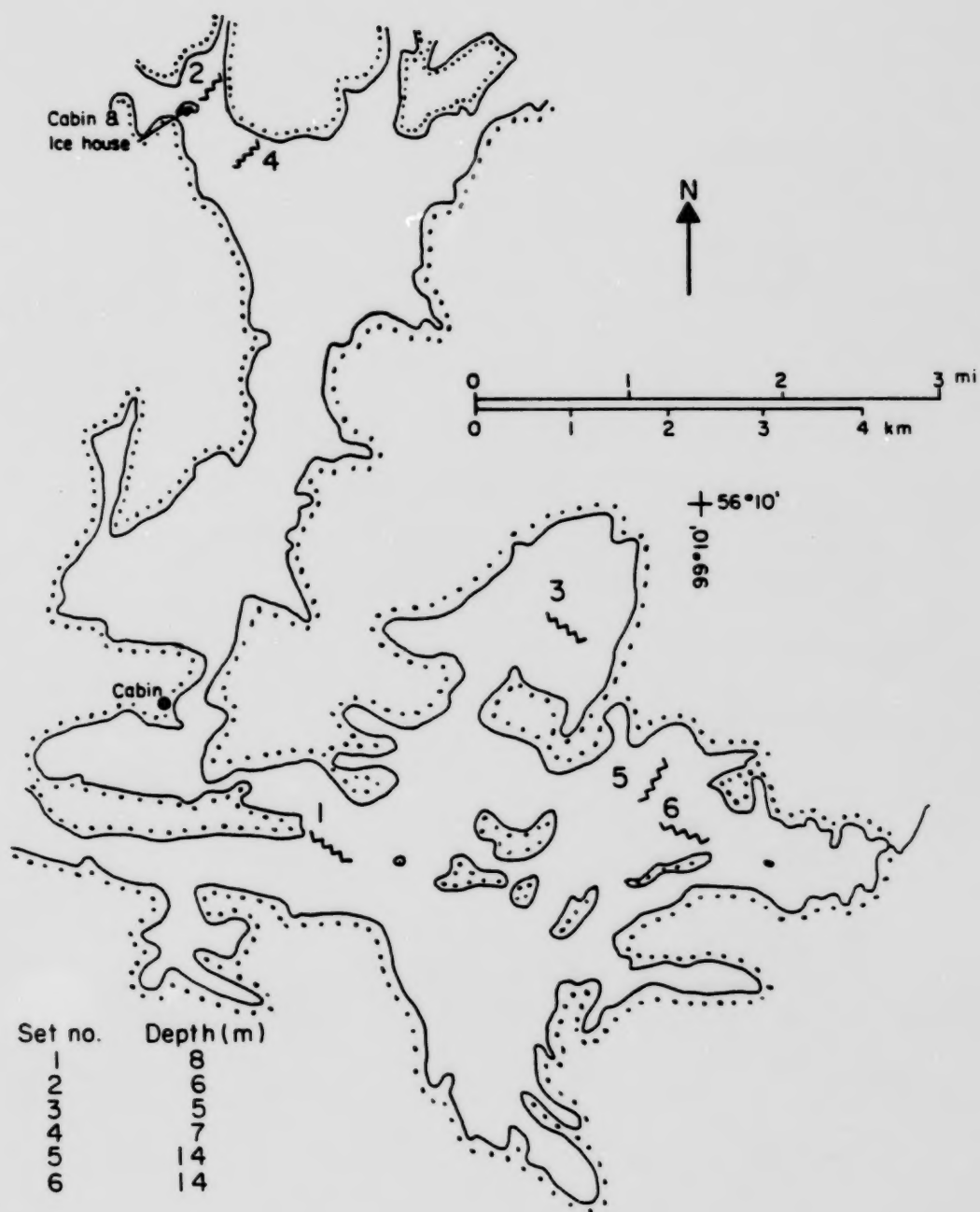
Appendix 2. Netting locations and depths at each set in lakes studied under the Canada - Monitoring Mercury Monitoring Agreement, 1983 - 1985.



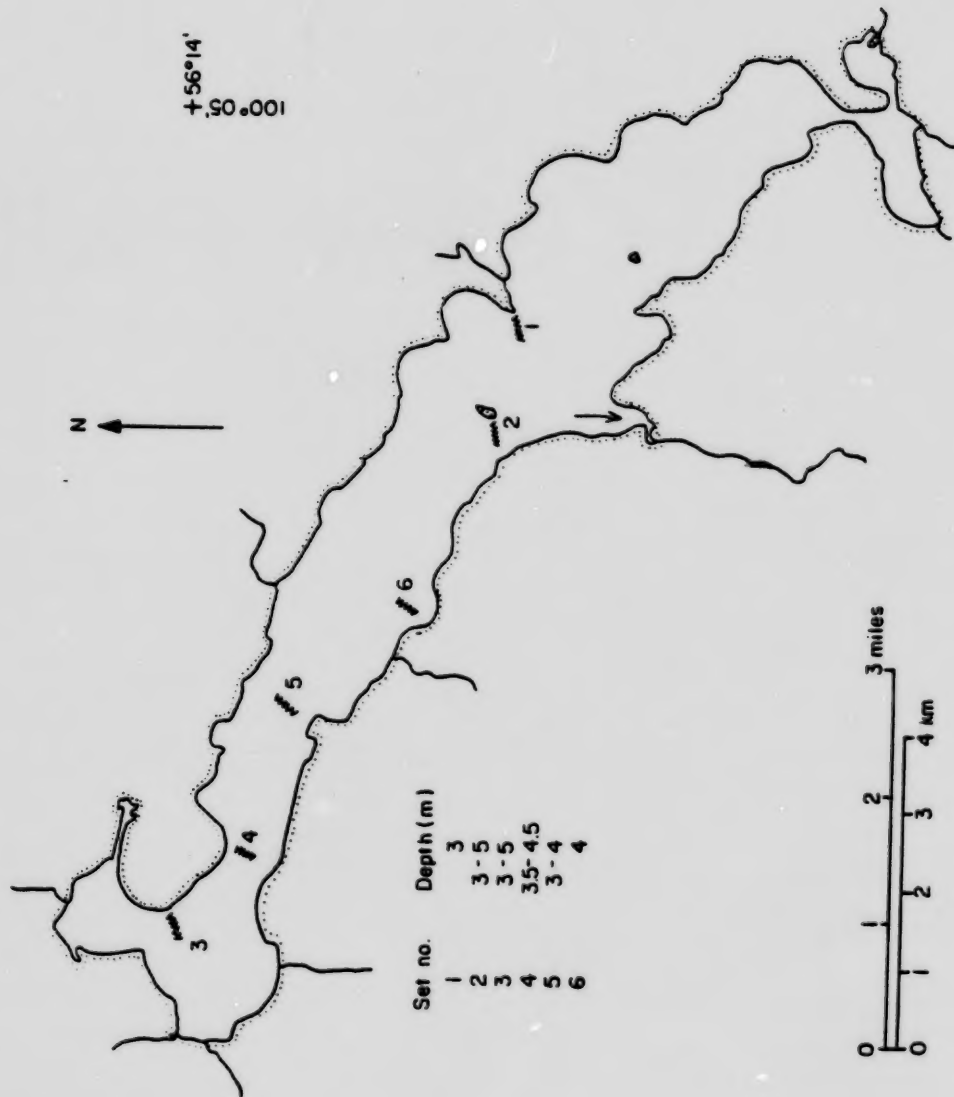
Karsakuwigamak Lake, 1984



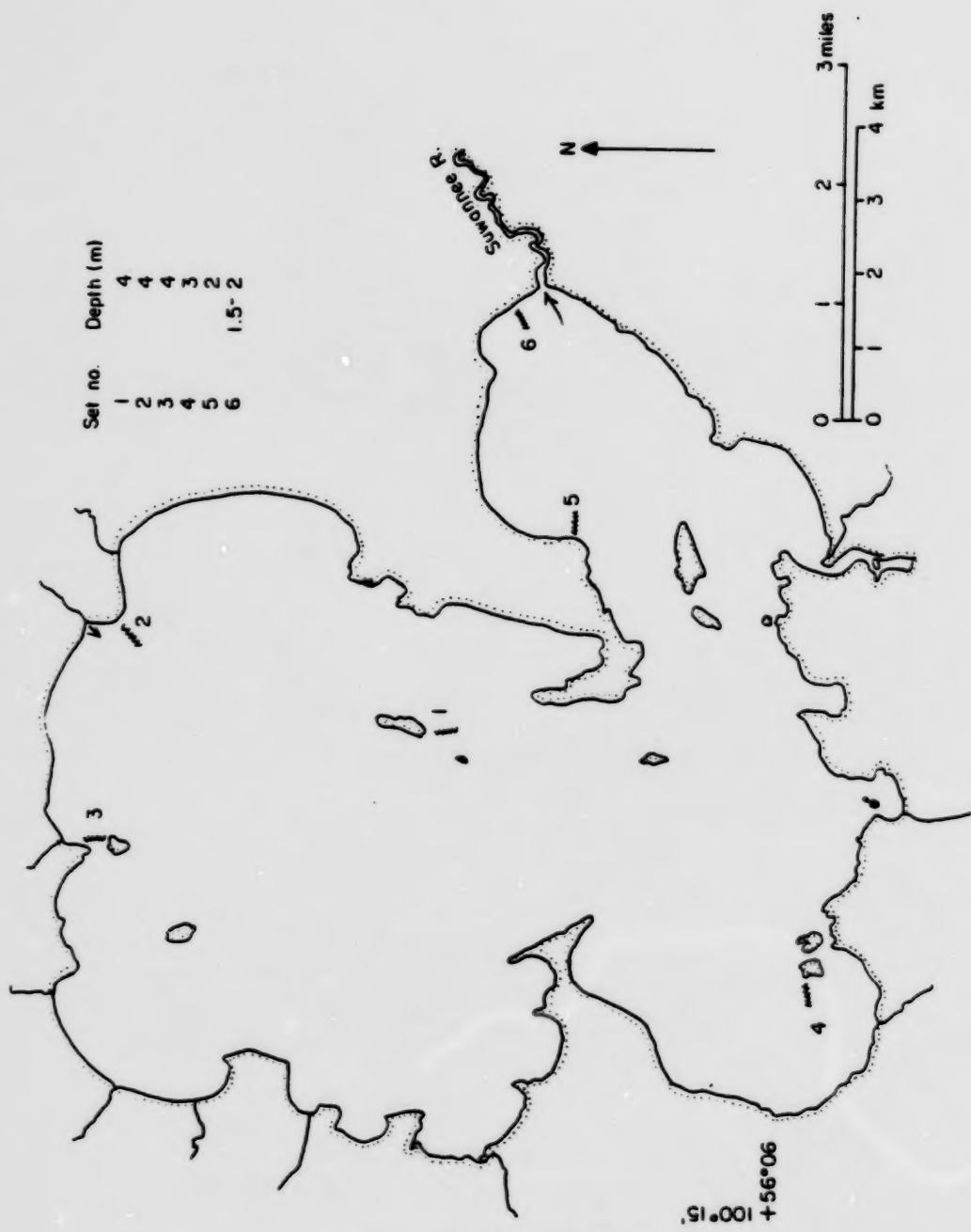
Pemichigamau Lake, 1985



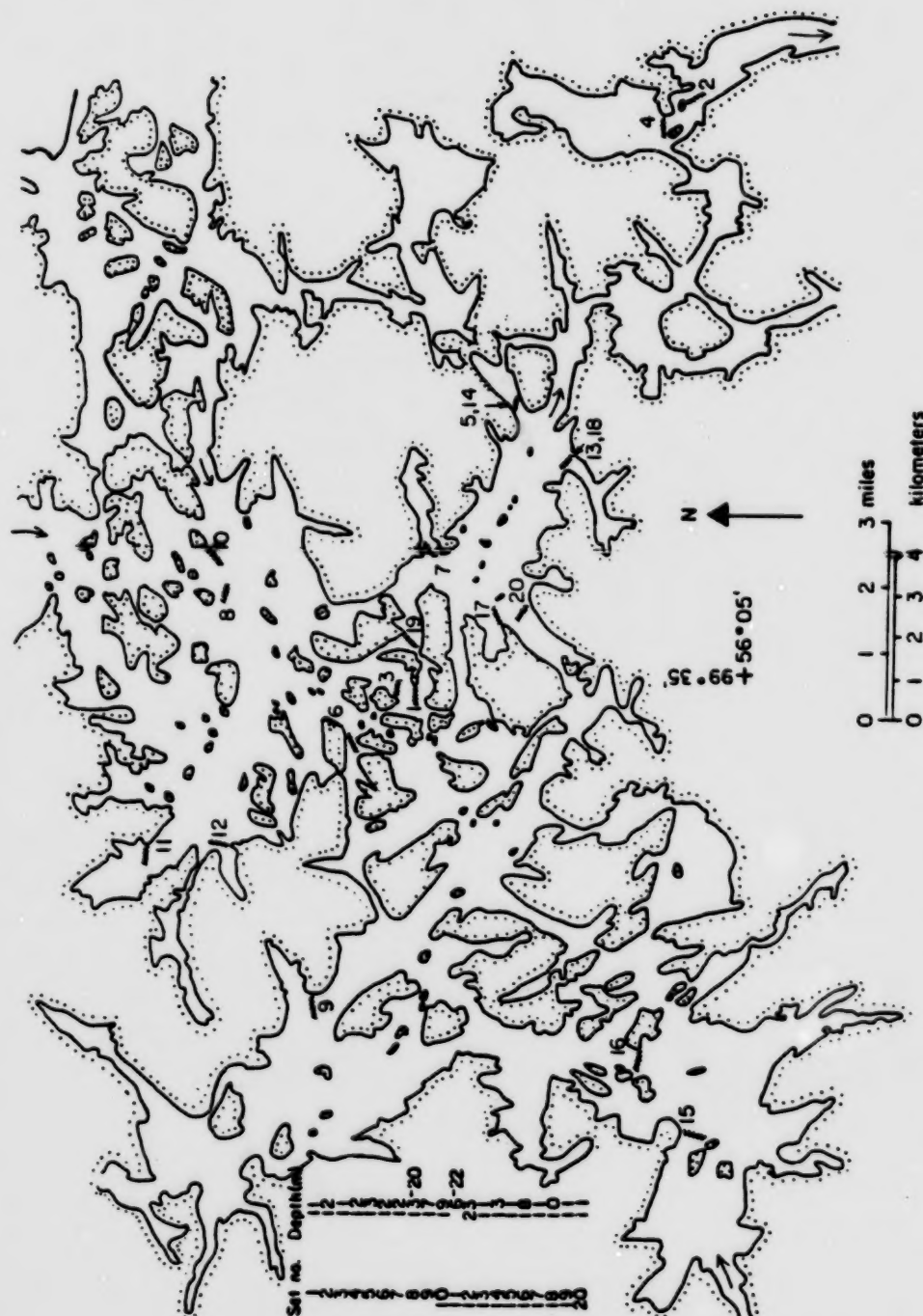
West & Central Mynarski Lakes, 1984



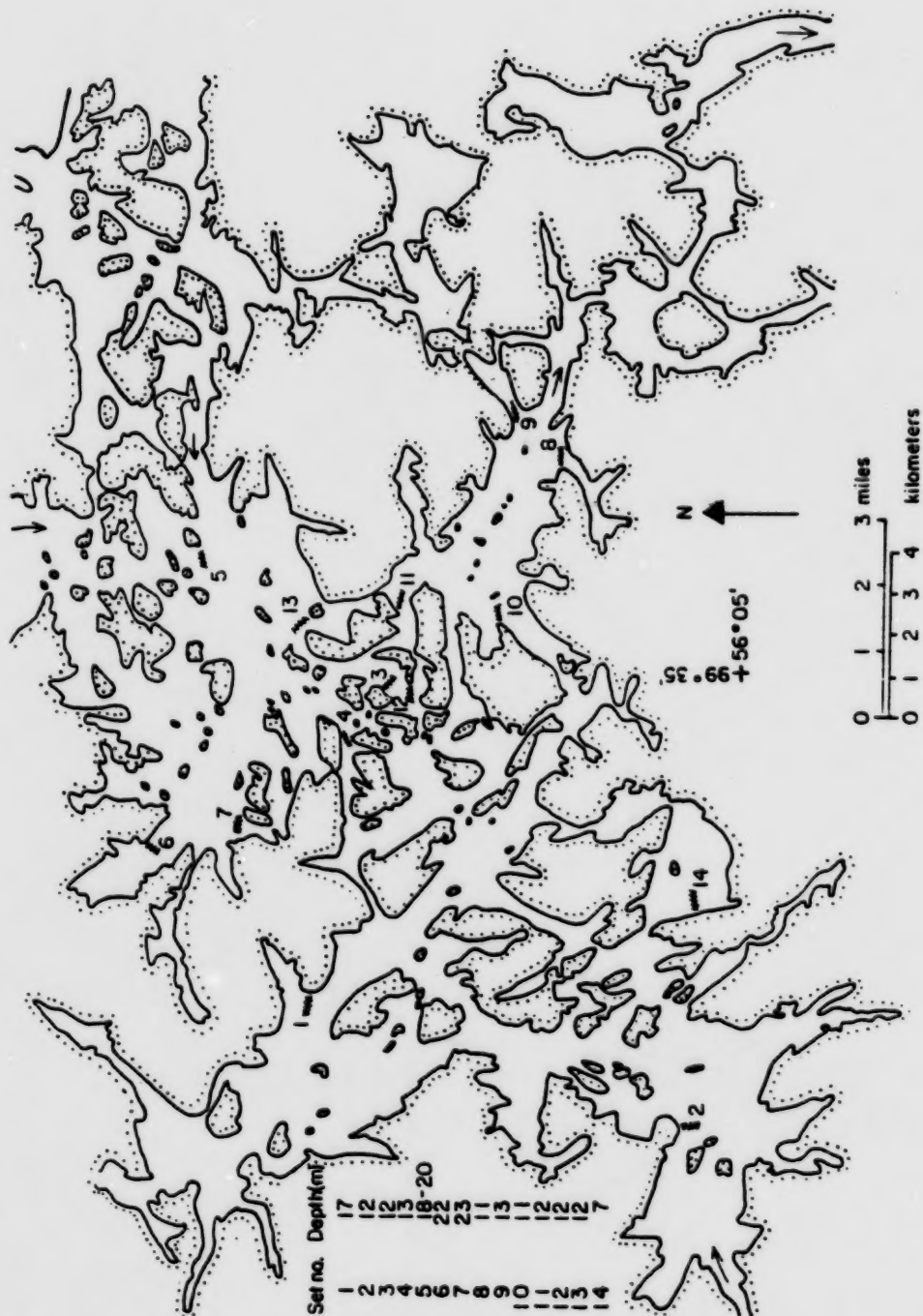
Costello Lake, 1985



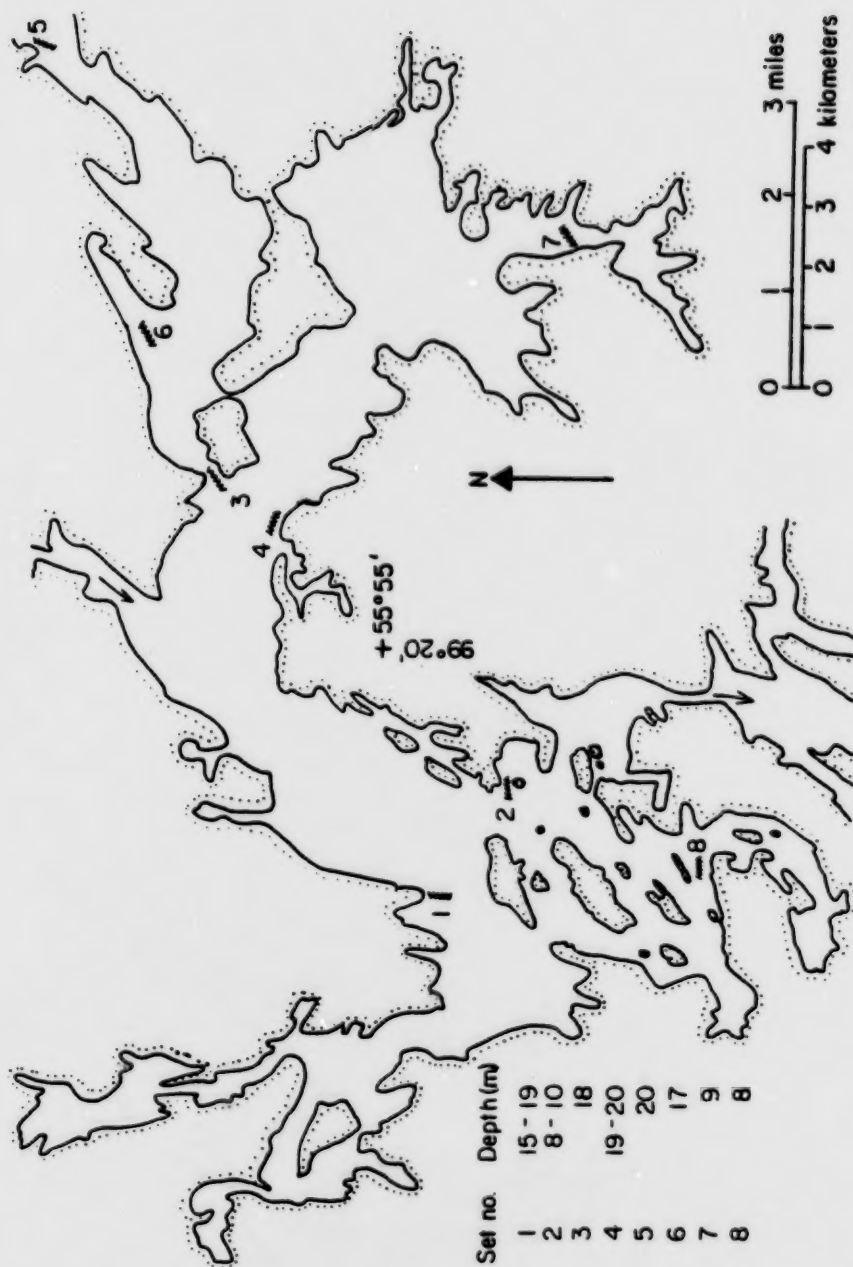
Suwannee Lake, 1985



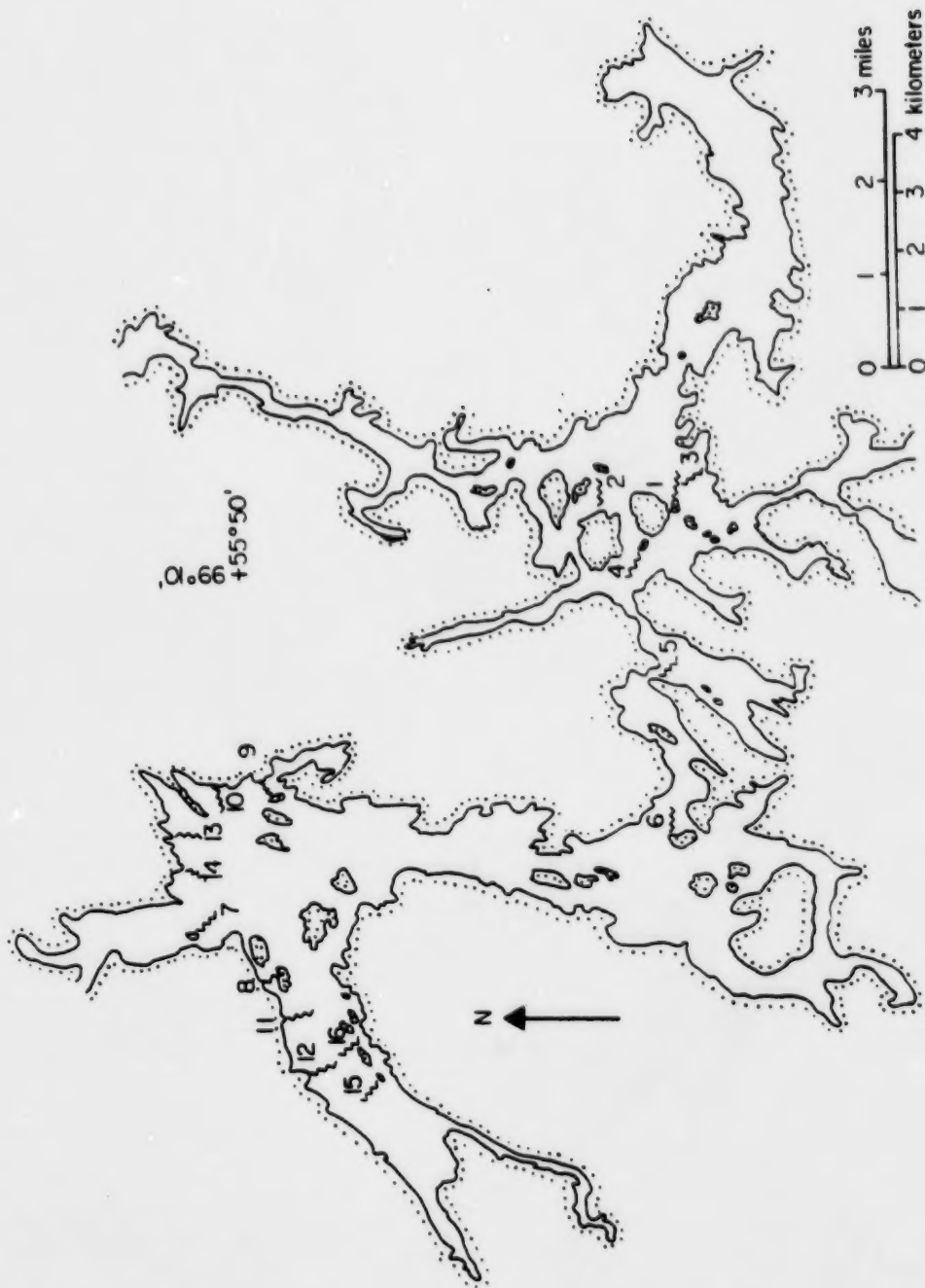
Rat Lake, 1984



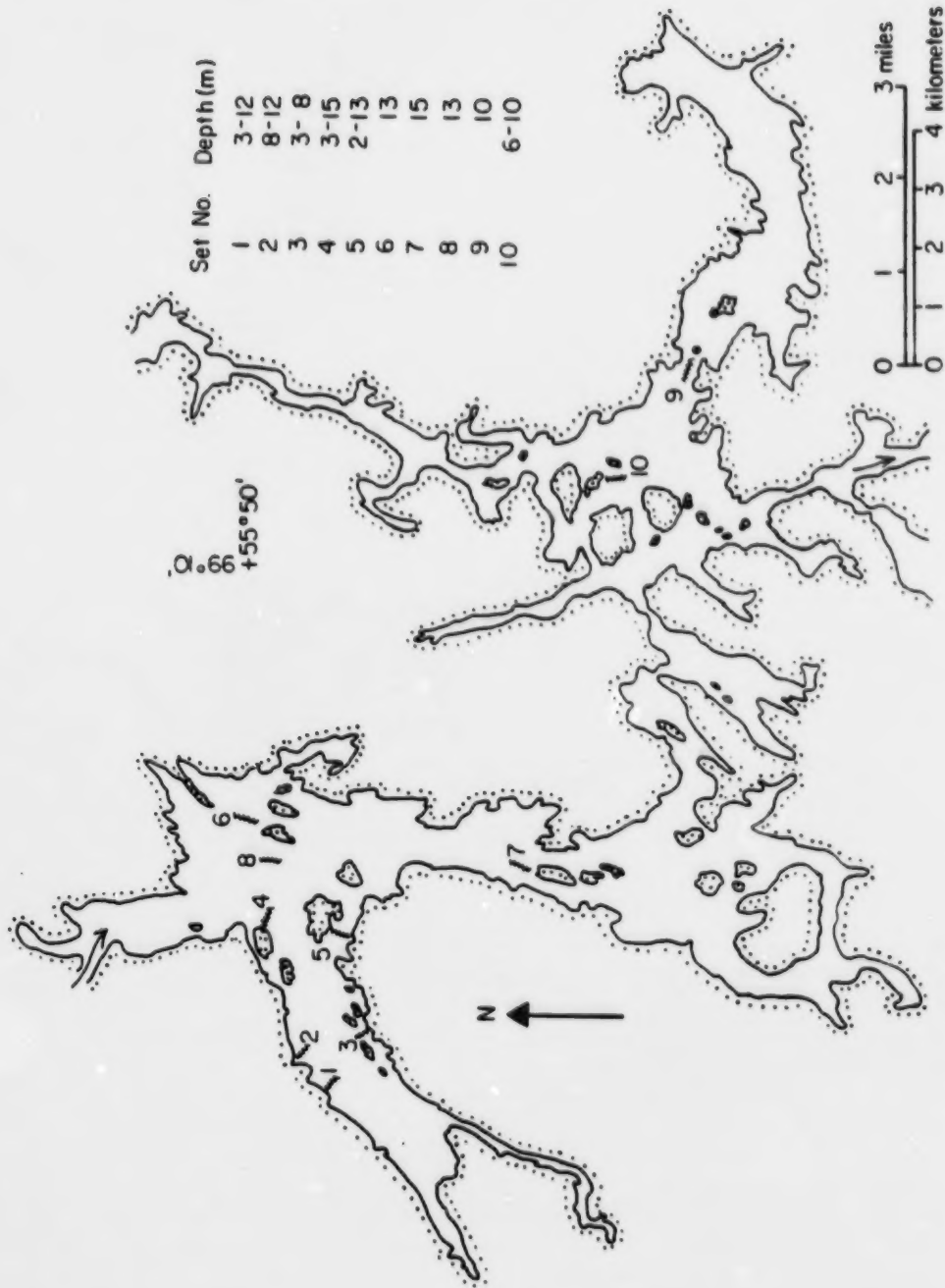
Rat Lake, 1985



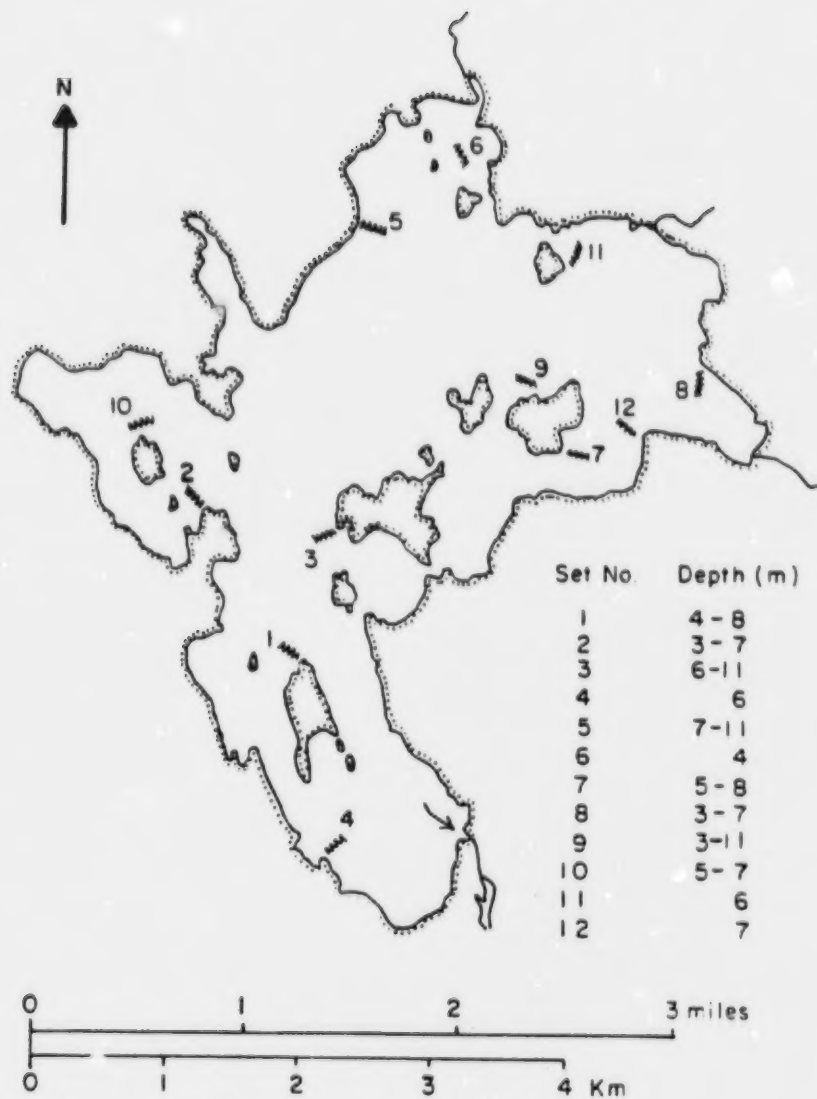
Notigi Lake, 1985. The 1983 set location information is unavailable.



Wapisi Lake, 1983. Depths of sets unavailable.

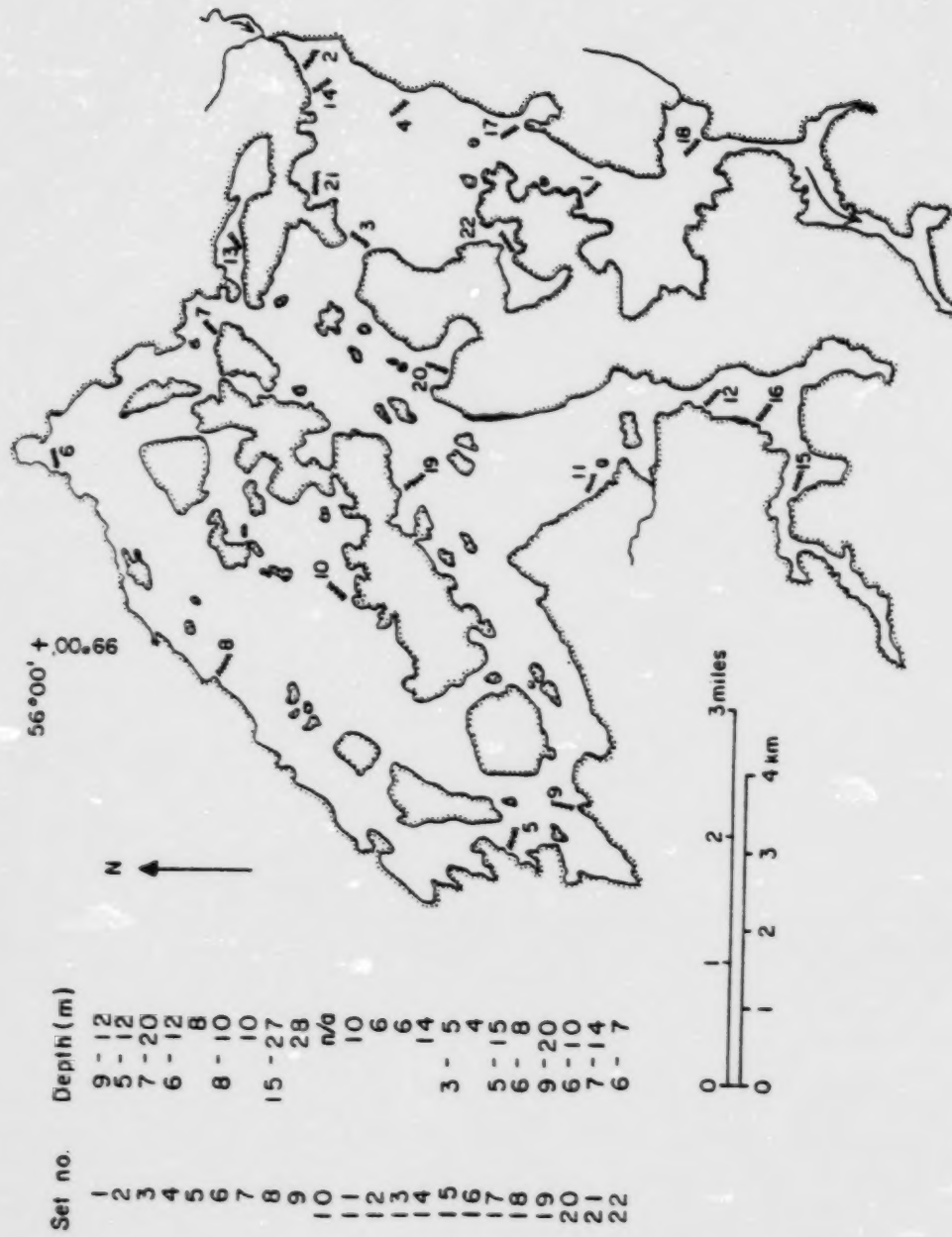


Wapitu Lake, 1985.

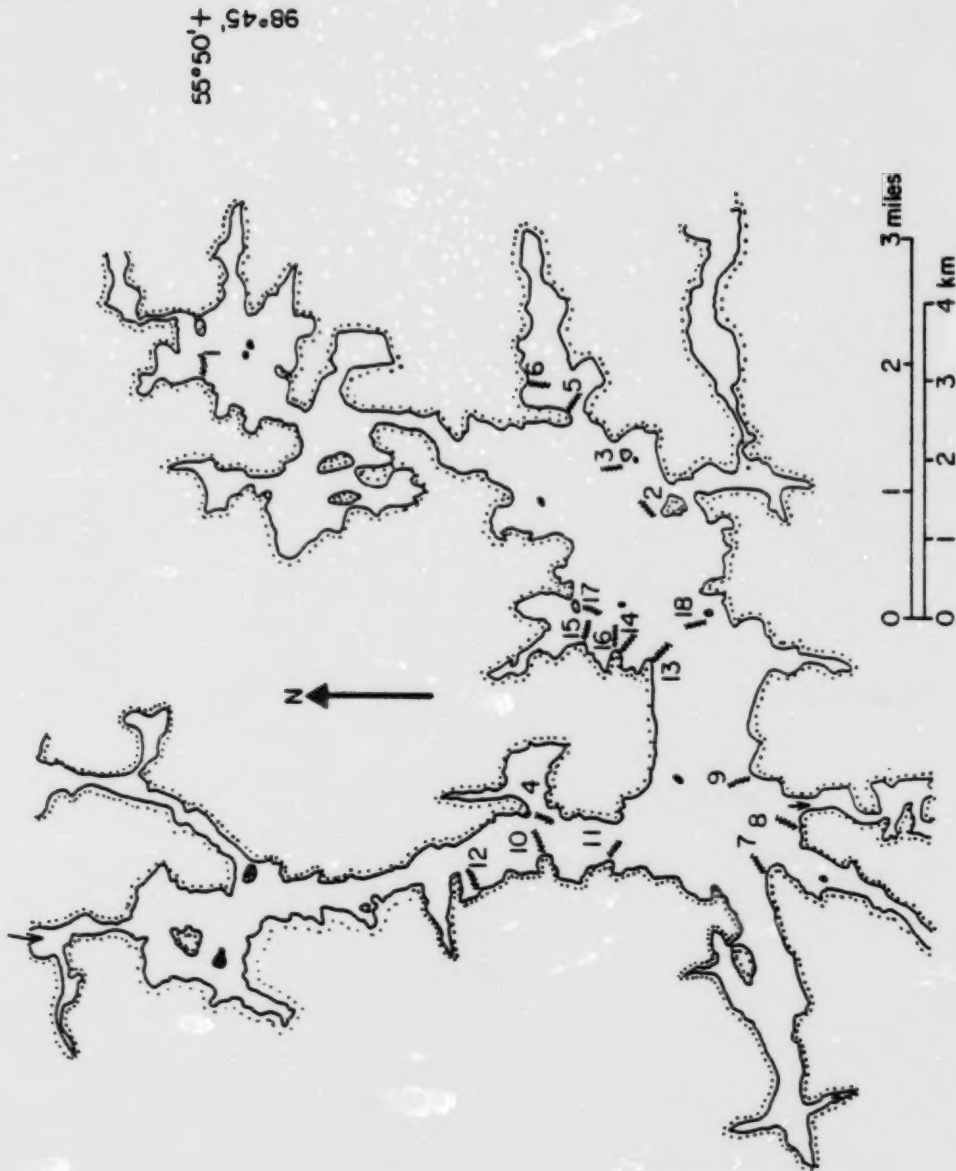


56°00' +
98°50'

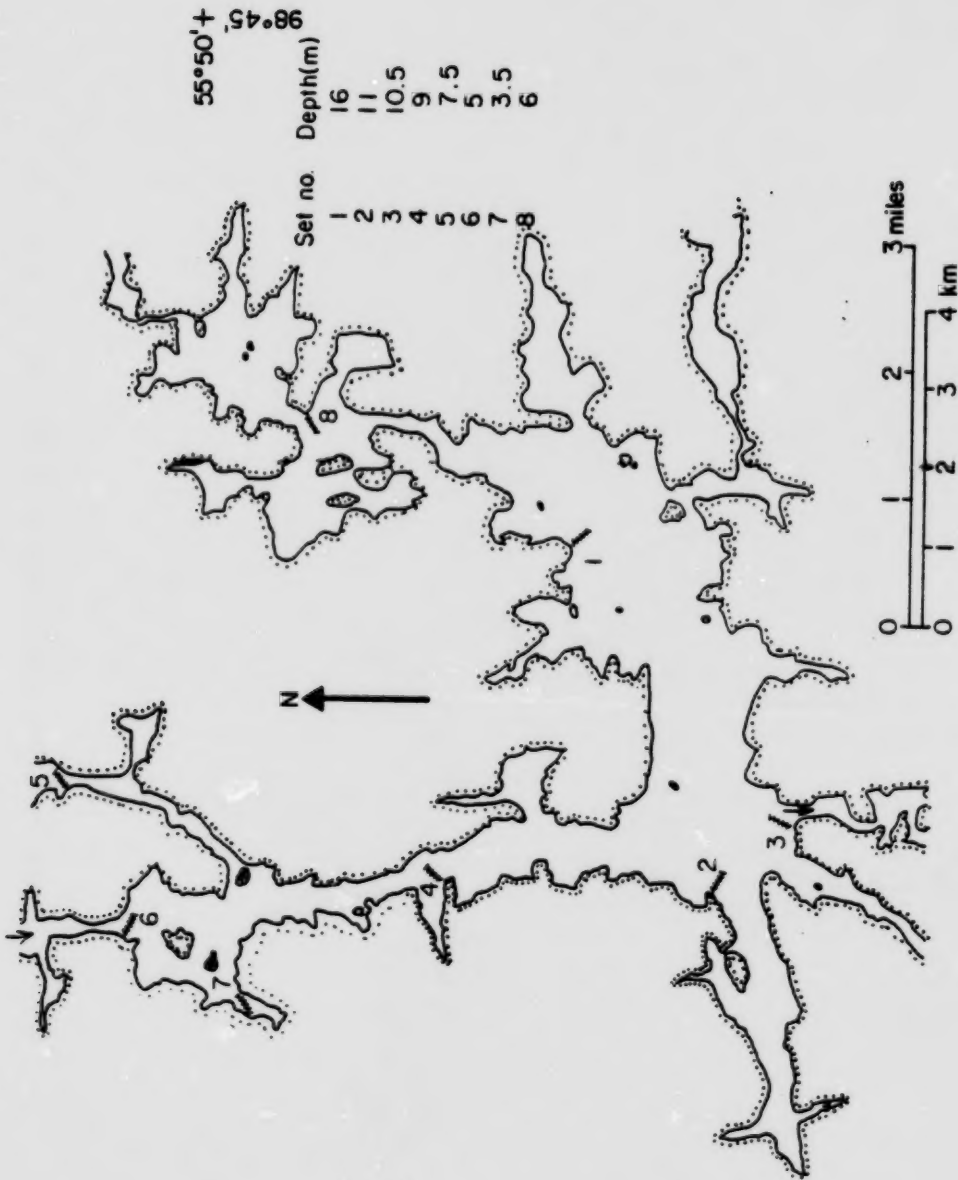
Macheewin Lake, 1984.



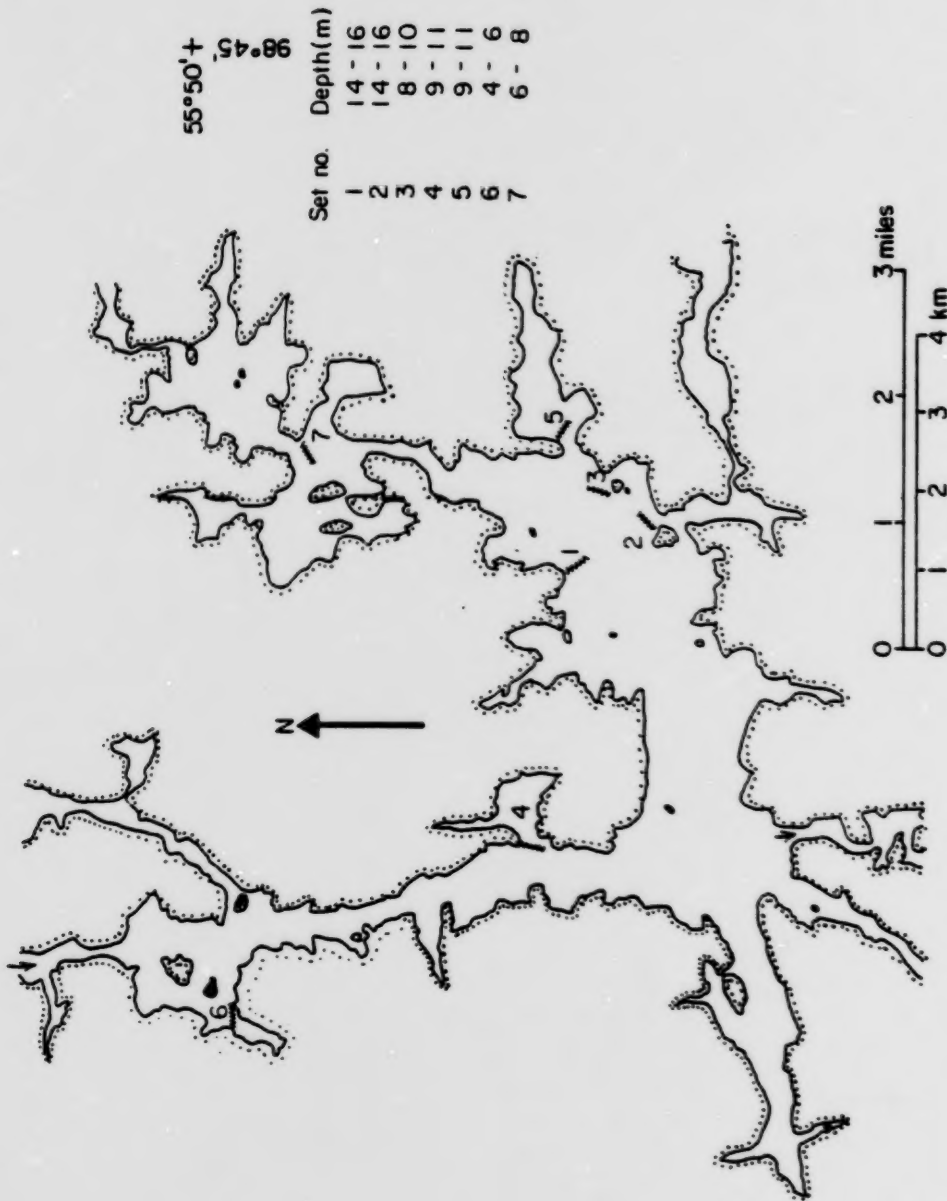
Osik Lake, 1984.



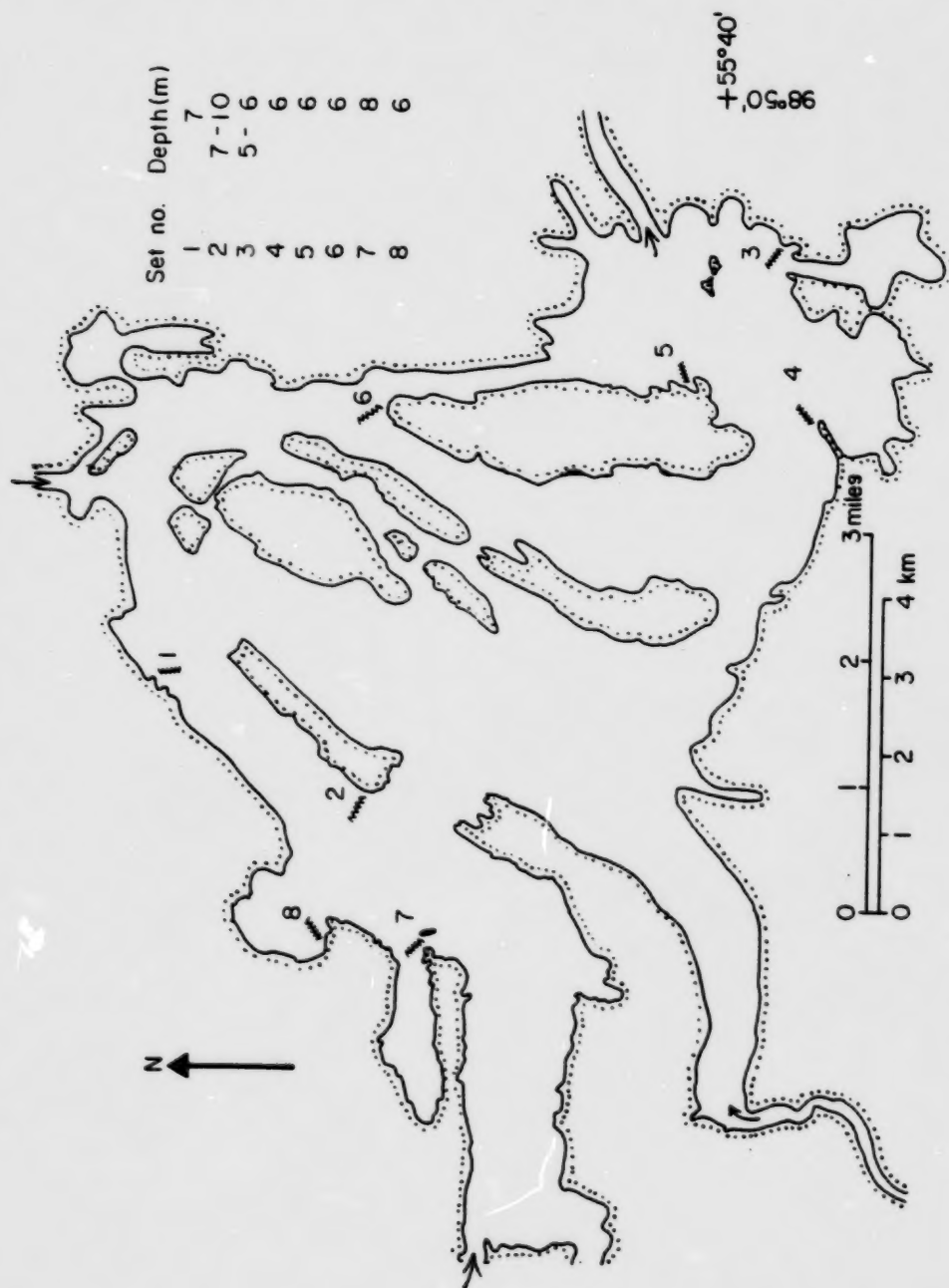
Footprint Lake, 1983. Depths of sets unavailable.



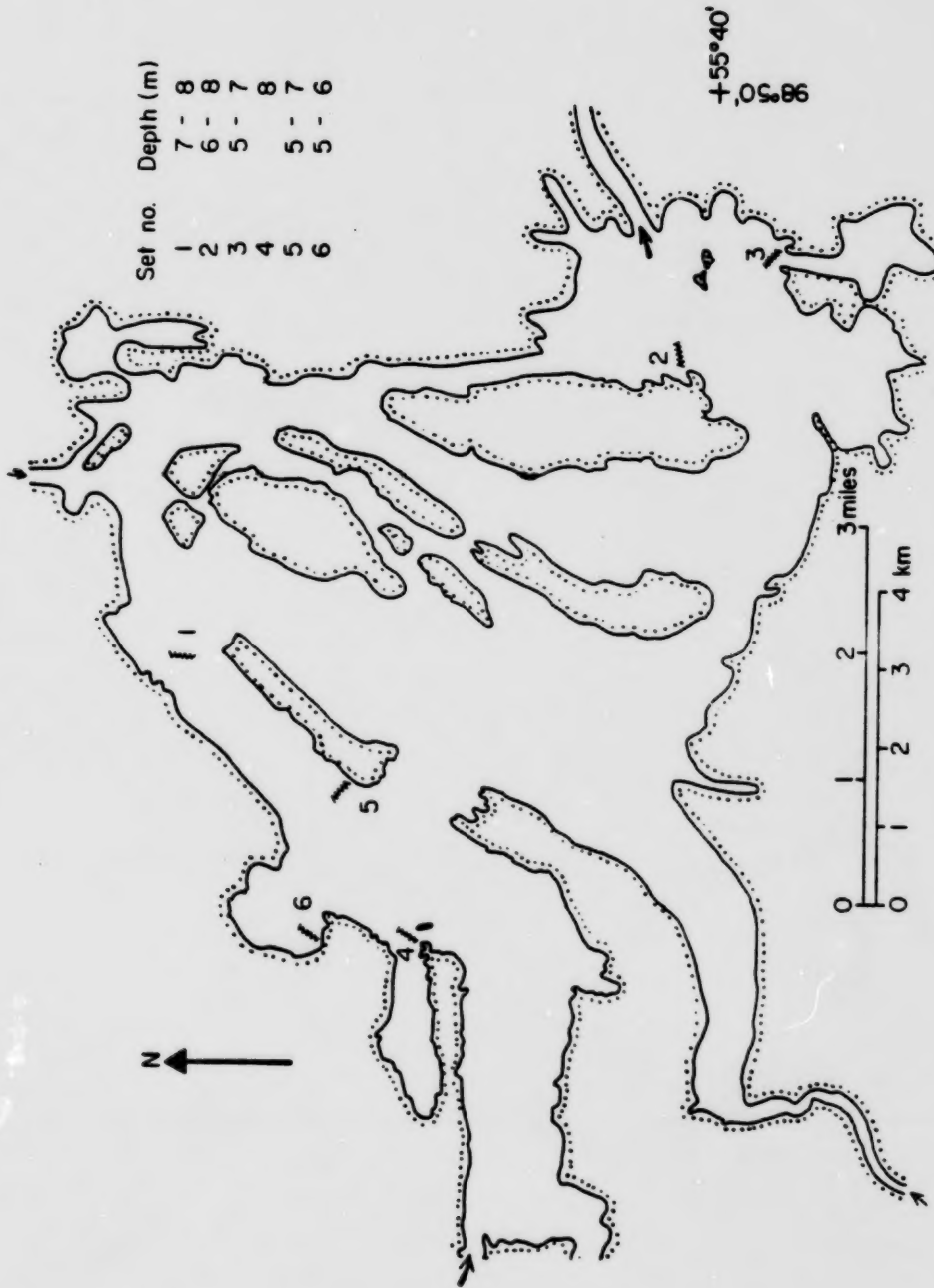
Footprint Lake, 1984.



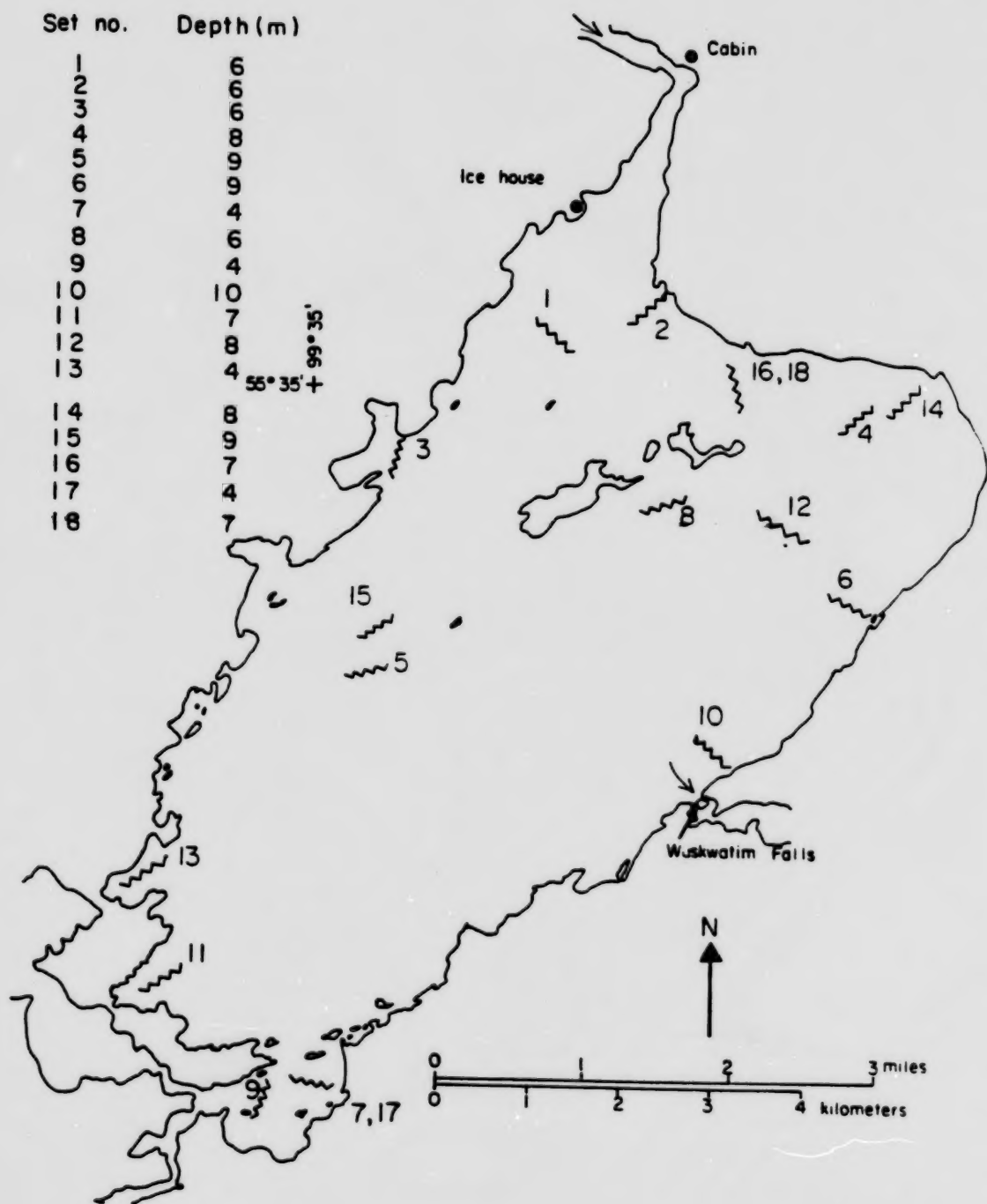
Footprint Lake, 1985.



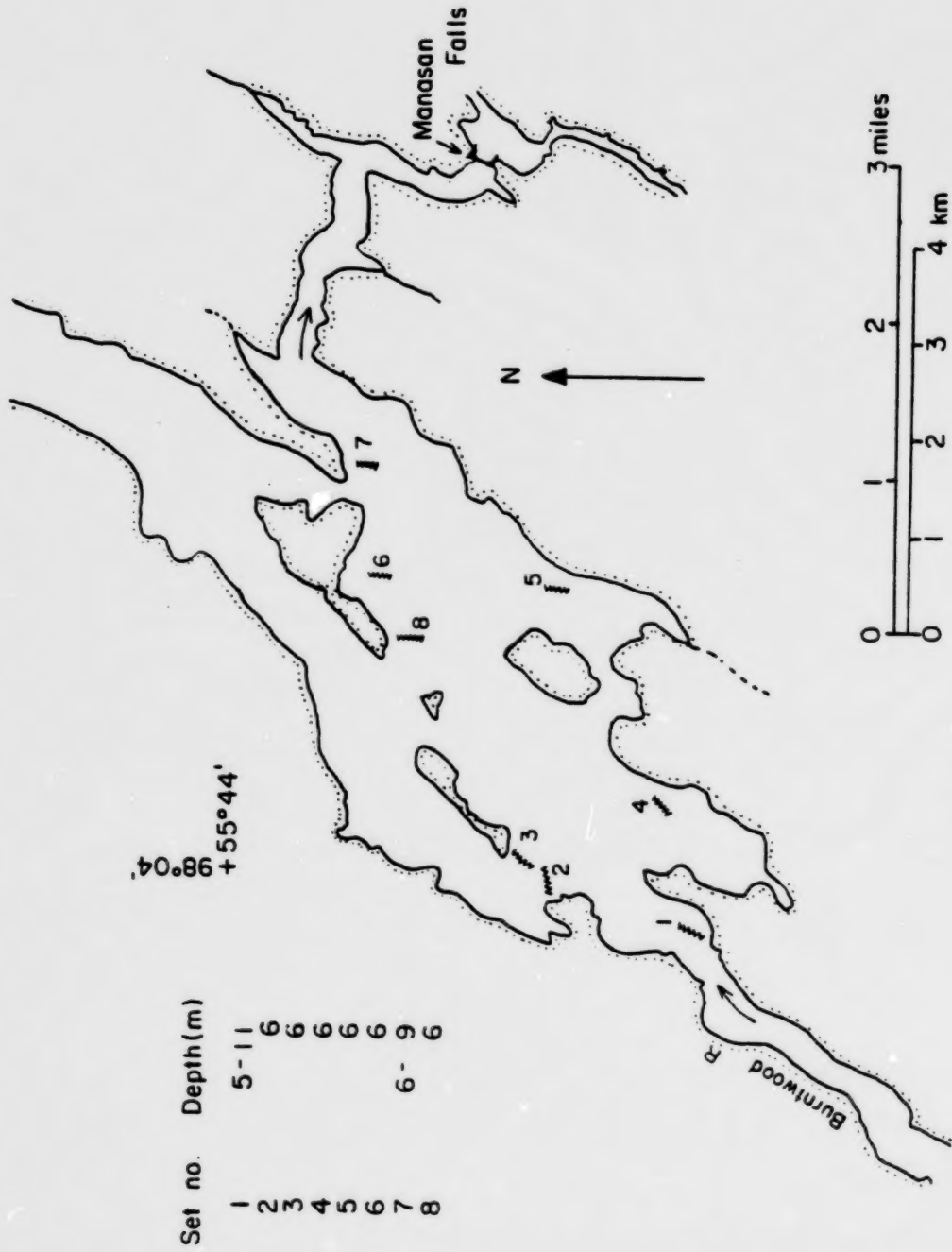
Threepoint Lake, 1984. The 1983 set location information is unavailable.



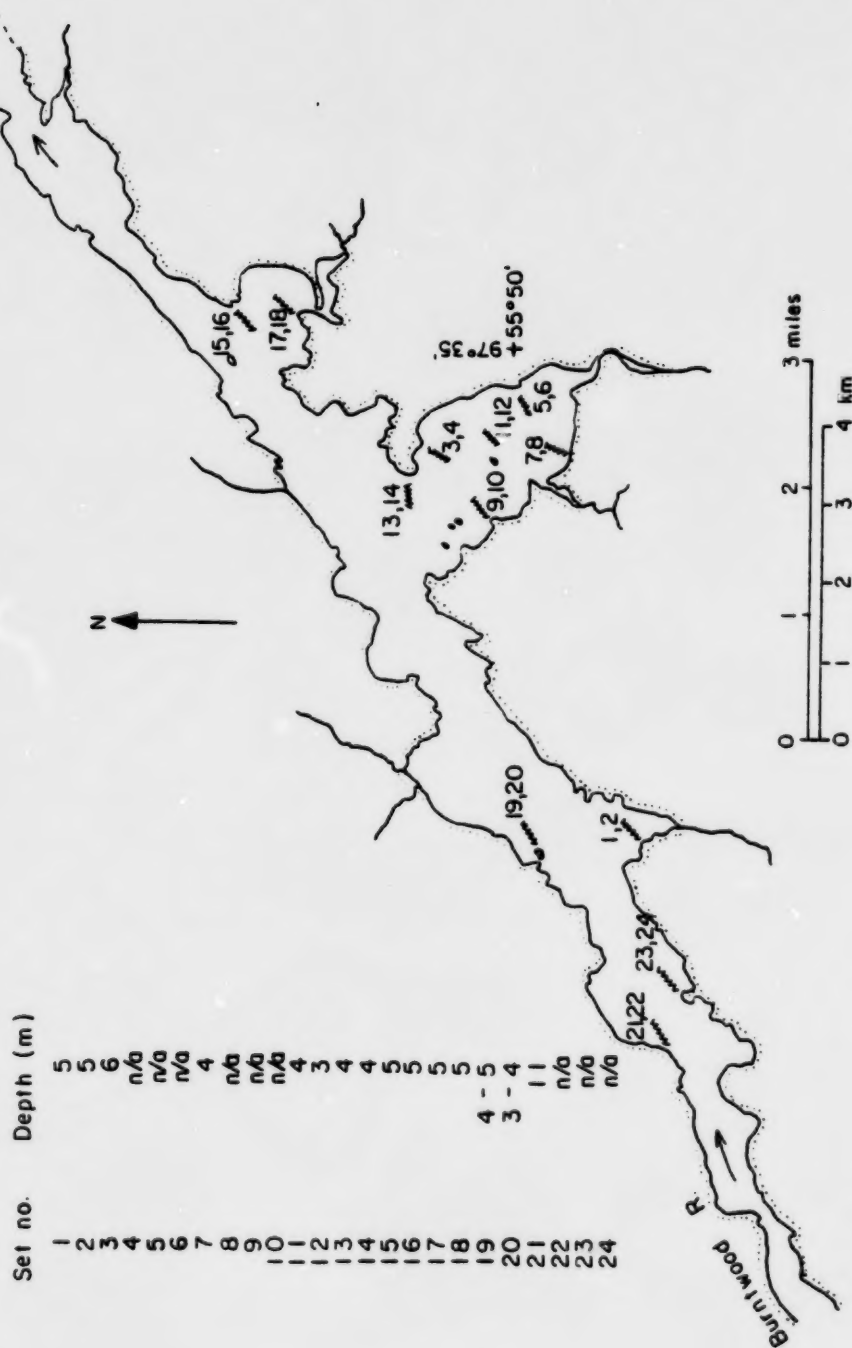
Threepoint Lake, 1985.



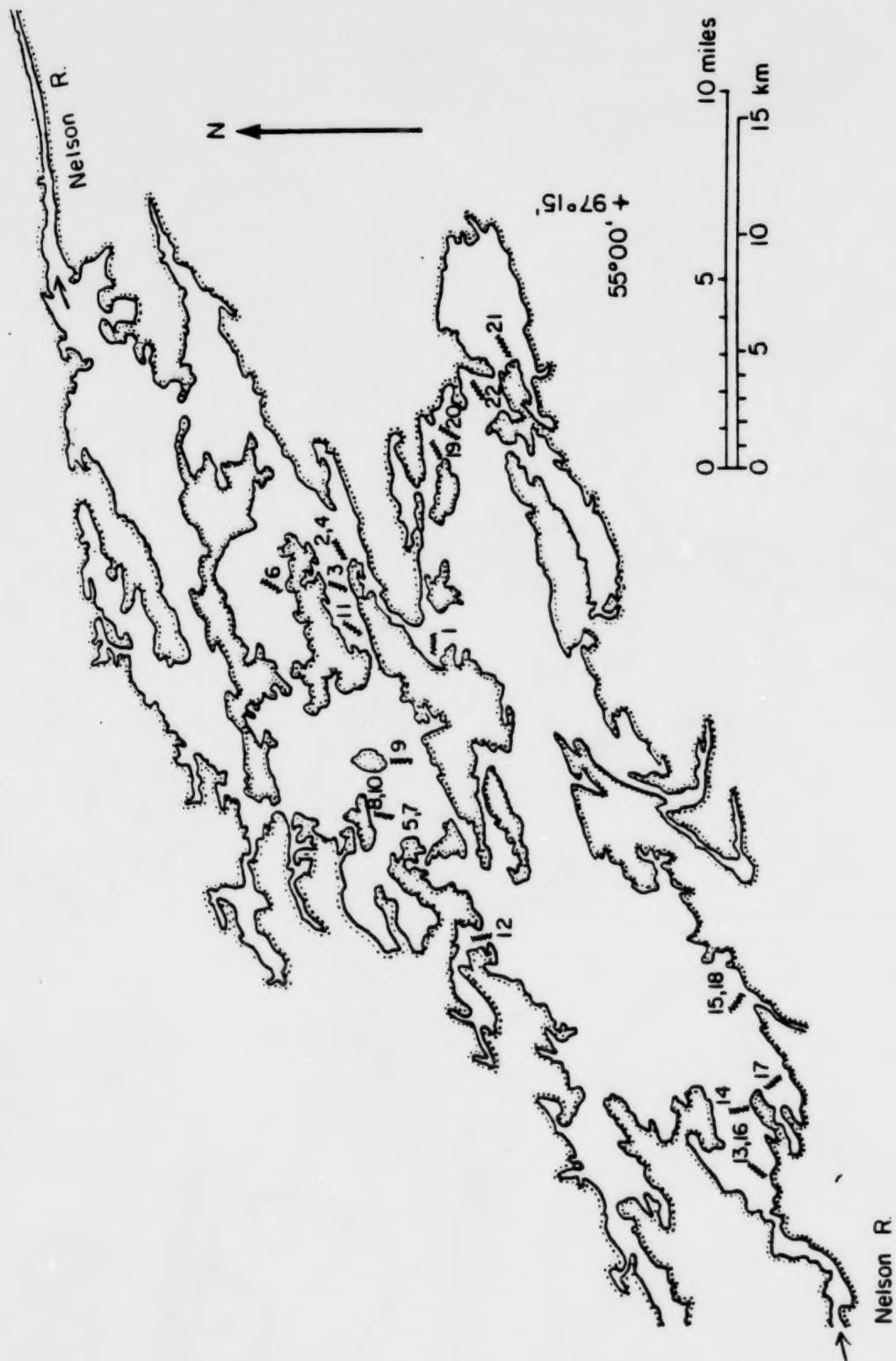
Wuskwatim Lake, 1984.



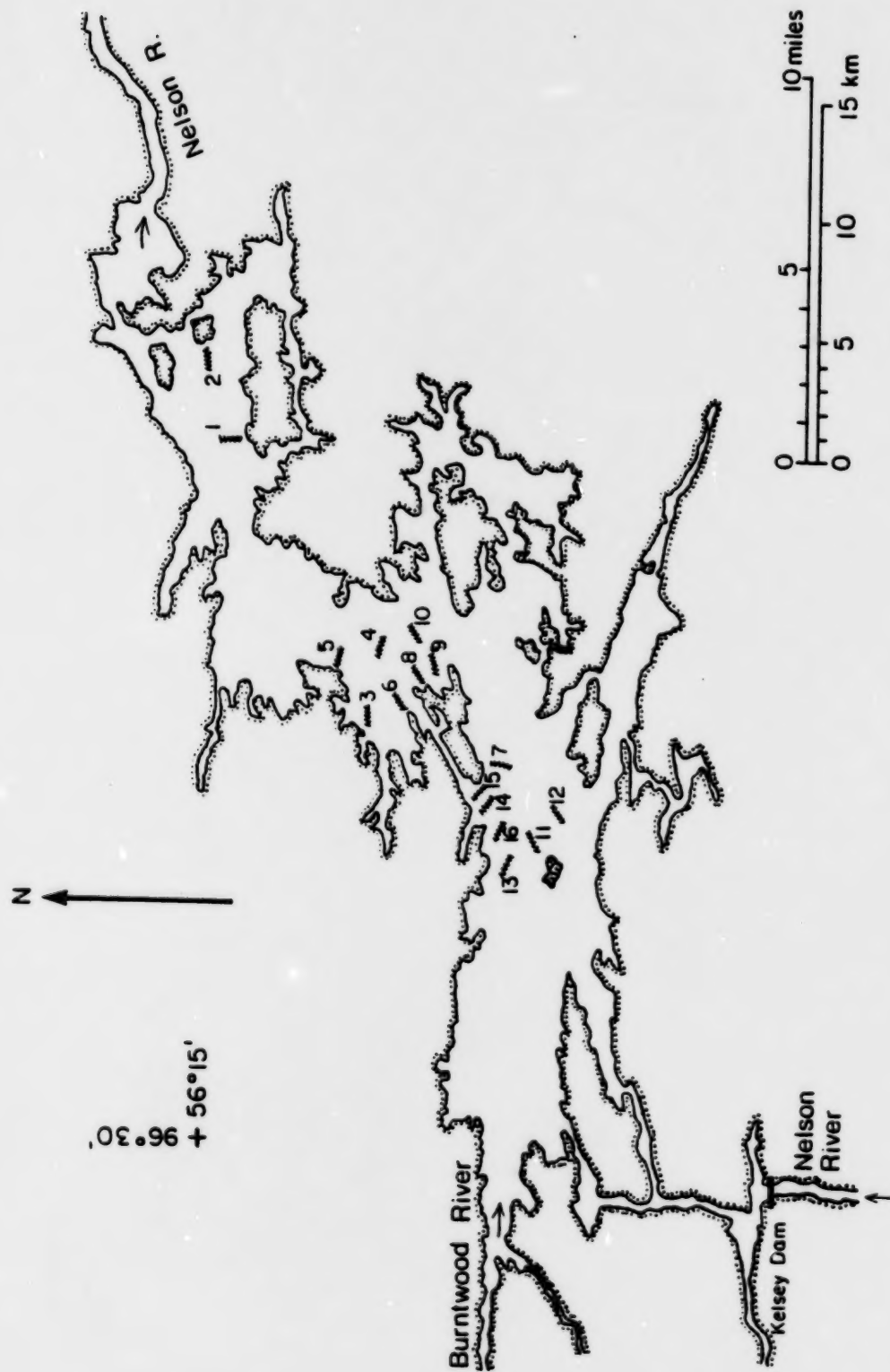
Birch Tree Lake, 1985.



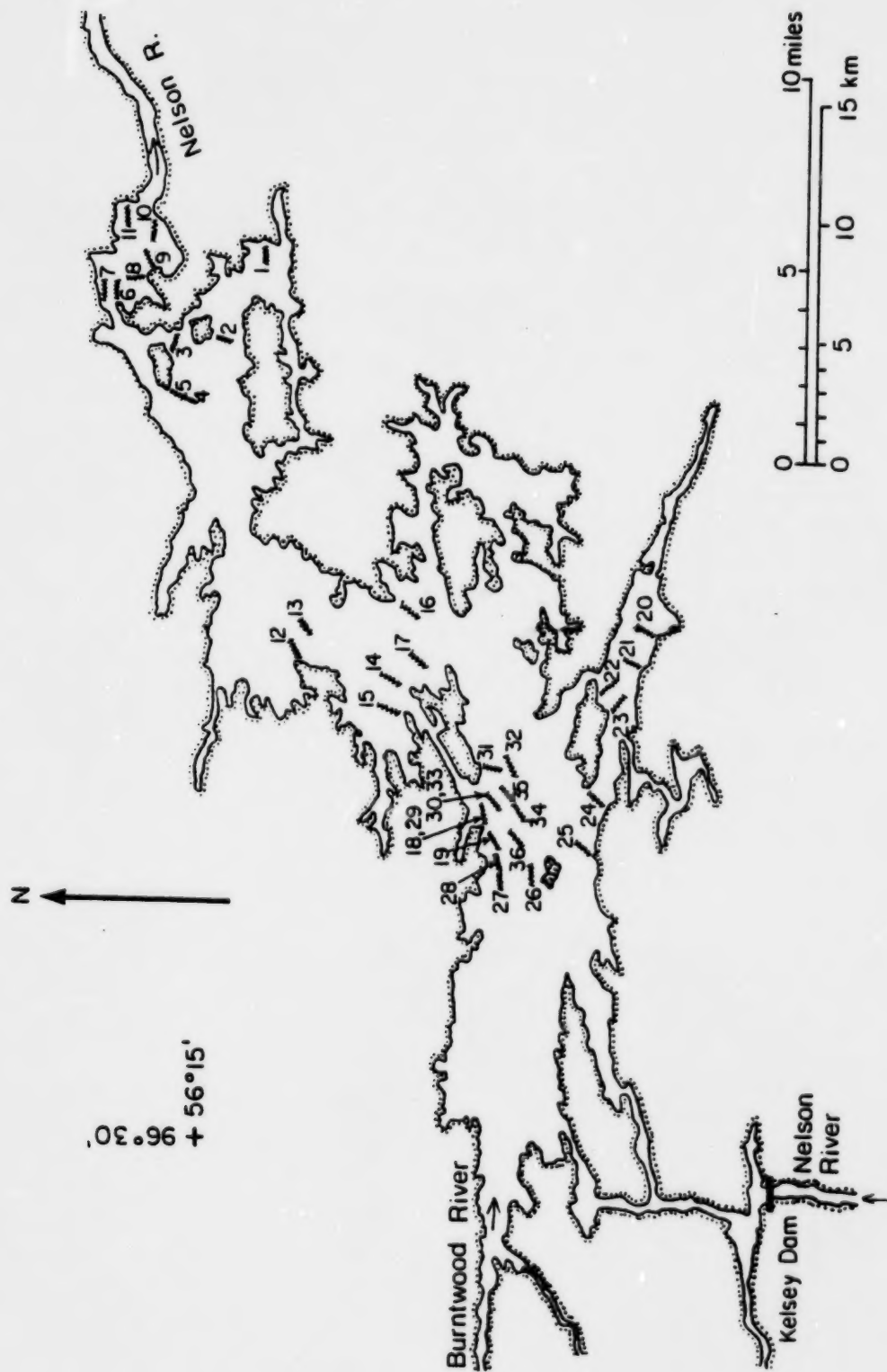
Apussigamasi Lake, 1984.



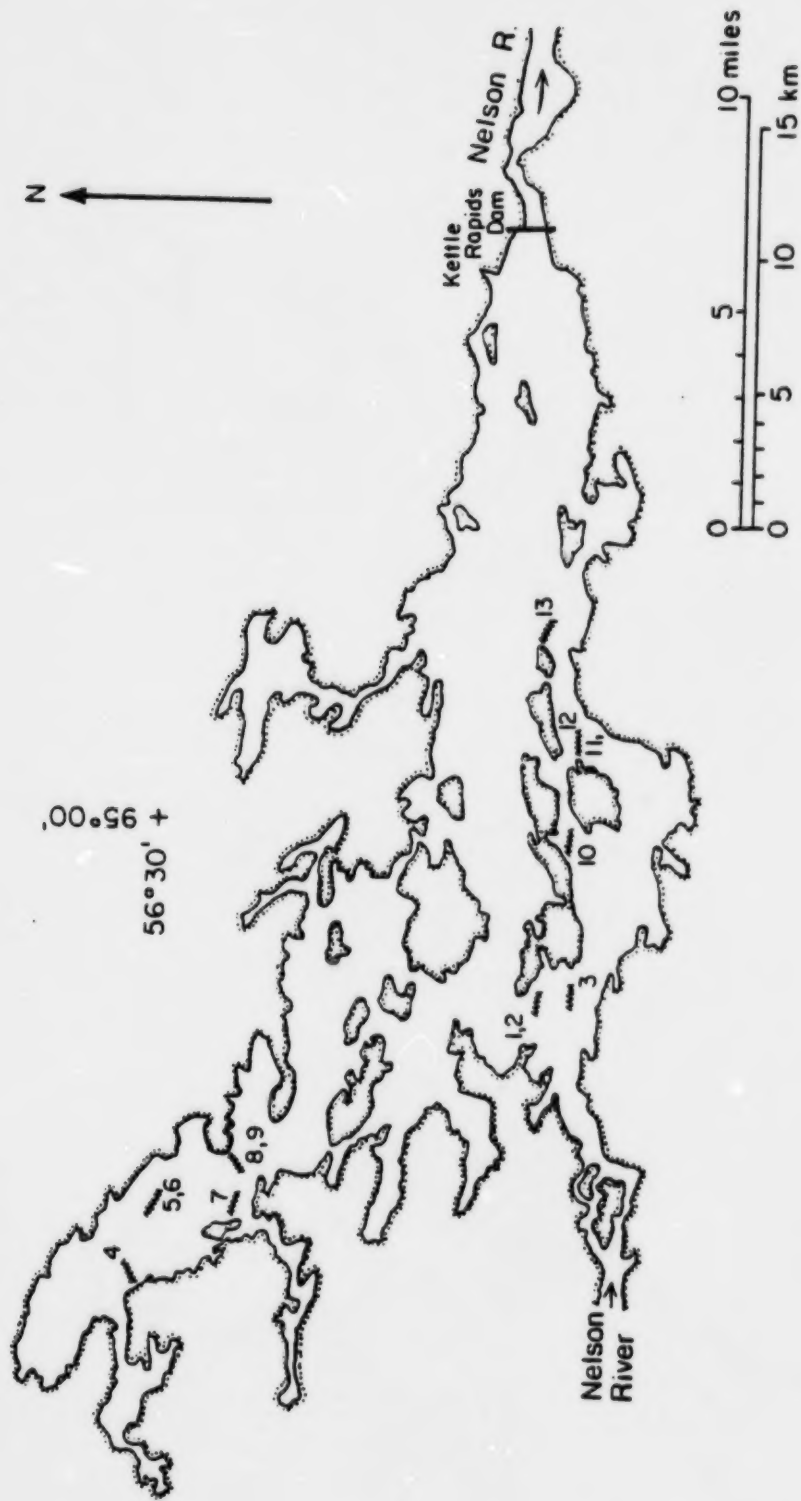
Sipiwek Lake, 1983. Depths of sets unavailable.



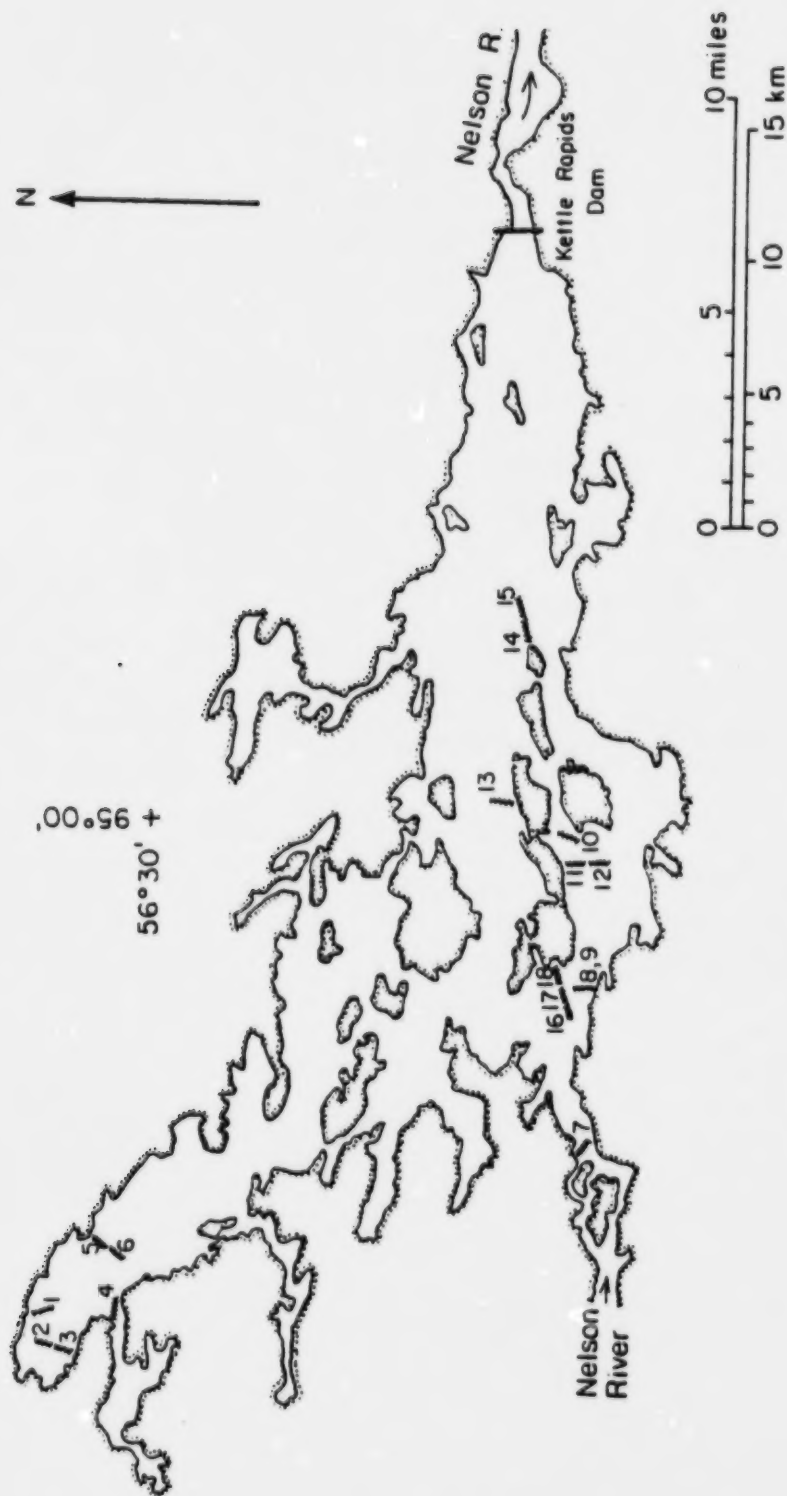
Split Lake, 1983. Depths of sets unavailable.



Split Lake, 1984. Depths of sets unavailable.



Stephens Lake, 1983. Depths of sets unavailable.



Stephens Lake, 1984. Depths of sets unavailable.

Appendix 3. Catch summaries from standard gang nets set in lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.

Notigi Lake, August 25 - September 7, 1983.

Set No.	Whitefish	Walleye	Northern Pike	Cisco	White Sucker	Yellow Perch	Total
1	12	2	2	5			21
2	57	1	3	63			124
3	4	7	8	3	3		25
4	47	1		83	1		132
5		1	7	12			20
6		8	5	5			18
7	15	2	12	2	5	1	37
8	5	2	6	6	1	1	21
9	4	1	2	1			8
10	1	1	5	1			8
Total	145	26	50	181	10	2	414

Wapikau Lake, July and August, 1983.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Yellow Perch	Total
1	9	12		7	38	6		1	73
2	8	21	3	9	37	7	1		86
3	10	23	5	19	27	4			88
4*	3	9		2	9	2	1		26
5**					1				1
6	9	26	4	14	13	5			71
7	9	25	7	7	5	14			67
8	8	11	2	7	5	1	1		35
9	20	7	2	4	6	5			44
10	14	8	2	2	7	9			42
11	17	36	2	2	21	17			95
12	5	58		13	54	13		2	145
13	15	4	3		1	28			51
14	6	3	1	1	2	10			23
15	5	57	3	10	31	8			114
16	7	43	3	8	11	13			85
Total	145	343	37	105	268	142	3	3	1046

* 3" & 3 3/4" nets were lost

** all nets except 2" were lost

Footprint Lake, June 17 - July 8, 1983.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Burbot	Total
1	21	9	2	10	88	9	8	147
2	4	3		10	45			62
3	11		3	6	85			105
4	9	5		11	85			110
5		2	1	6	76			85
6	9	1		3	129			142
7	6	7		1	83			97
8	4		2	3	111			120
9	1	3	1	2	35			42
10	6	6	2	13	79	2	1	109
11	12	2	2	5	96	5		122
12	18		5	8	74		6	111
13	12	9		10	46		1	78
14	31	2		2	96	1	2	134
15	25	3	8	3	62	4	1	106
16	14	3	2	7	148	5	1	180
17	25				82		2	109
18	23				71	1	5	100
19	20	1			83	1	2	107
Total	251	56	28	100	1574	28	29	2066

Threepoint Lake, July 12 - 26, 1983.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Shorthead Redhorse	Yellow Perch	Total
1	62	34	13	20	10	18	2	1	1	161
2	29	16	7	11	5	5				73
3	32	4	6	2	3					47
4	4	38	18	11	7	4	1	2	1	86
5	13	18		10	21	1			2	65
6	15	13		11	35				1	75
7	15	10	2	1	3	4	3			38
8	4	3	3	3	2	5	5			25
9	2	9				2	8			21
10	11	6	4	2		5	4		1	33
11	22	13	1	2	26	11	2			77
12	29	8	1	4	15	3	1			61
Total	238	172	55	77	127	58	26	3	6	762

Sipiwek Lake, 1983. The fishing dates were July 6 - 13 (sets 1 - 12, August 23 - 25 (sets 13 - 18 and October 5 - 6 (sets 19 - 22).

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Shorthead Redhorse	Yellow Perch	Mooneye	Freshwater Drum	Burbot	Lake Chub	Total
1*	1	5	6	2	4	5		3		14	2		3	44
2		4	5	4	6	2		4		8	2			36
3		5	7	2	1	2		6		4				27
4	2	5	10	8	14	8		3		4	1			55
5	2	13	1	9	27	4			1	4				65
6		3	4	3	61	4		2		8				85
7	3	22	7	5	23	1		1	1	24				87
8	4	23	1	5	29	6				9				77
9	1	12		4	2	3		2		13	1			38
10	1	9	2	2	24	2				11				31
11		12	3	1	1	1		1		1	2			22
12		14	1	1	1	1		1	1	3				23
13*		7	24	2		8		1	2	6	2	1		53
14*		15	2			10	1			138				169
15*	2	49	18	11	9	4	1	2	1	86				185
16*		3	19	3		10		1	4			1		123
17*		22	18	10	12	7		2	2	80	3			172
18*	1	58	35	1	56	21		1	1		1			177
19*				2	4			1		4				11
20*	1	14		1	2	2				5		2		23
21*	4	14		21	90	17			7	1		1		154
22*		1			9									10
Total	22	310	163	97	375	118	2	31	20	427	14	5	3	1587

* Consisted of 2 standard gangs (i.e. 50 yards of each mesh). All other sets had 25 yards of each mesh.

Split Lake, June 28 - July 5. 1983.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Shorthead Redhorse	Yellow Perch	Trout Perch	Mooneye	Goldeye	Freshwater Drum	Burbot	Lake Chub	Total
1	8			3	27	7					3					48
2	1	20	3	11	43	6					7					93
3	1	2	5	2	23	5			1			1				93
4	7	2	1	2	48	11			1		5					45
5	46	5	26	4	10	25										75
6	6	26	11	23	217	20	10									139
7	25	1	6		1	12	5				10		2	1		317
8	1	3		2	23	9							1	1		61
9	6	1	1	2	24	2		1			2					46
10	5	4		3	28	2					2					38
11	36	1	8	1	2	4	3			1						46
12	15	3			12	1								2	15	73
13	26	8			30	9										31
14	48		17	1	5	9	8	1			3					81
15	81		3	1	8	4	17						1	4	15	108
16	78	5	4	1	3	15	13						1	2	10	126
Total	382	89	85	56	504	141	56	2	2	1	34	1	5	14	84	1456

Stephens Lake, August 31 - September 13, 1983.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Mooneye	Lake Chub	Total
1	5		12				12			29
2	2		4			2	8		1	17
3	10		7			3	9			29
4	11	5		4	37					57
5	23			13	38					74
6	2	1		3	41					47
7	17	2		10	49					78
8	42	3		14	77					136
9	5	2		2	114					123
10	1	1		1	26			51	8	88
11	8		1			2	37			48
12	1		1			2	2	11	1	17
13									6	
Total	127	14	25	47	382	9	68	62	16	750

Karsakuwigmak Lake, July 10 - 13, 1984.

Set No.	Whitefish	Walleye	Northern pike	Cisco	White sucker	Total
1	2	1	1			4
2	17	35	18	5	1	76
3	16	59	11	30		116
4	6	29	8	13		56
5	13	30	16	11		70
Total	54	154	54	59	1	322

West and Central Mynareki Lakes, July 7 - 10, 1984.

Set No.	Whitefish	Walleye	Northern pike	Cisco	White sucker	Longnose sucker	Yellow perch	Burbot	Total
1	14	4	8	91	1	7			125
2	3	24	22	46	4				99
3		36	7	18	11		2		74
4	7	4	16	67	1				95
5	15		2	136		1			154
6	13			109		1		1	124
Total	52	68	55	467	17	9	2	1	671

Rat Lake, June 13 - 24, 1984.

Set No.	Whitefish	Walleye	Sauger	Northern pike	Cisco	White Sucker	Yellow Perch	Burbot	Total
1	4	25		8	2	2			41
2	5	8		7	3	4	1		28
3	6	10		8	1		1		26
4	2	28		13		6	1		50
5	12	29		8		1			50
6	4	12		9	2				27
7	11	6		10	1		1		29
8	32	10		4	4			3	53
9	40	3	1	14	7			1	66
10	83	3		10					96
11	99		1	3	2			2	107
12	49			1				6	56
13	4	20		8	1				33
14	14	16		7		2			39
15	25	2	1	42	24				94
16	14			1	13				28
17	3	22		10	4				39
18	7	9		18	7				41
19	8	23		6	1	2			40
20	1	23		4	1				29
Total	423	249	3	191	73	17	4	12	972

Macheewin Lake, July 26 - August 3, 1984.

Set no.	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Yellow perch	Burbot	Total
1		6	2	9		12	3		32
2	1	9		6		11	21		48
3	28	1		6	9	13		1	58
4			6	9		38	2		55
5	16		1	20	32	17	1		87
6		1		6		5	1		13
7		8	6	7		30	3		54
8		7		12		11	14		44
9	2	10	1	14		11	5		43
10		1	1	16		20			38
11	1	2		5		4			12
12	2	2	3	7	3	24	2		43
Total	50	47	20	117	44	196	52	1	527

Osik Lake, July 12 - 26, 1984.

Set no.	Whitefish	Walleye	Northern pike	Cisco	White sucker	Yellow perch	Burbot	Total
1	8		9	128				145
2	17	10	26	19	21	1		94
3	10	1	12	41	1		2	67
4	3	7	29	7	2	1		50
5	6		17	6	9			38
6	8		7	18				33
7	3		12	72	1			88
8	36		1	50			1	159
9	43		13	116				59
10	15		5	31				54
11	13		22	36				80
12	2	11	9	29	18			29
13	2	3	2	6	7	2		285
14	27		2	256				13
15		1	6	1	4	1		96
16	3	6	10	10	66	1		79
17	12	1	8	57	1			70
18	5	7	17	7	34			62
19	28		3	31				39
20	10	9	12	7	1			51
21	21	1	11	13	5			51
22	4	1	4	6	36			51
Total	274	58	235	947	206	6	4	1730

Footprint Lake, June 11 - 22, 1984.

Set no.	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Yellow perch	Burbot	Total
1	117	2	2		10			1		132
2	26	1	2		38	2				69
3	14	3	3	2	39	1			1	63
4	8	5		6	91	1				111
5	12	11		7	99	2				131
6	3	5		3	65	3	1			80
7	4	13		29	19	17		7		89
8	20	34		17	221	2		1		295
Total	204	74	7	64	582	28	1	9	1	970

Threepoint Lake, June 22 - July 11, 1984.

Set no.	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Yellow perch	Burbot	Goldeye	Total
1	9	4	2	6	2	6	3				32
2	3	5	2	10	1	12	1				34
3	36	17		7	70	11	1	4		1	147
4	35	6	6	6	22	17	2		1		95
5	13	10	1	9	48	12	1			1	94
6	5	9	1	3	30	30	1				49
7	12	30	3	10	16	19	1		1		92
8	4	6	2	6	7	13					38
Total	117	87	17	57	166	120	9	4	2	2	581

Muskvatim Lake, July 31 - August 9, 1984.

Set no.	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Yellow perch	Burbot	Total
1	22	3	8	1	8	9	1	1		53
2	5	10	29		67	3		1		115
3	20	2	11	3	18	6		1		61
4	39	6	39		147	3				234
5	20	6	13		39	4	1		2	85
6	10	7	64	1	38	9				129
7	1	22	10	7	83	16		13		152
8	12	4	26	2	54	10				108
9	4	7	20	3	152	30		13		229
10	28	9	99		234	7	3		3	383
11	8	1	20	8	23	16		9		84
12	6	4	19		124	3	1			157
13		1	6	4	6	8		4		29
14	33	2	37		67	8				147
15	23		19		27	4	1			76
16	18	35	34	1	63	8				159
17		42	13	7	59	22		5		148
18	23	43	40	1	133	2				242
Total	272	206	507	38	1342	168	7	47	5	2591

Apussigamasi Lake, June 18 - July 6, 1984.

Set no.	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Mooneye	Lake chub	Shorthead redhorse	Perch	Trout perch	Burbot	Total
1	2	5		1	2	19		1	1	1				32
2	2	5	1	3	3	18			2					34
3	9	15		4	3	14	1	39	1	2				88
4	7	13			8	20		9						57
5	14	16		4	14	5		3						56
6	10	15		3	19	19	2	1		2				71
7	10	3		36	1	2		20						72
8	8	14		7	14	10		1						54
9	9	7	2		13	9		18			1			59
10	7	2	3	1	7	13	1	1						35
11	4	9		3	5	9								30
12	4	8		1	8	13								34
13	4	5		1	2	1								27
14	11	13	4	3	3	16	1	12	1			1		62
15	12	5		3	5	16	2	1						44
16	9	4	2	2	3	9	1	9	1					40
17	12	4		2	4	12	1							33
18	9	3		7	4	9	1	8						41
19	19	7		2	1	17	6		2	1				55
20	4	3	1		4		1	1	2	1				17
21	8	4	7	1	2	9	6	1	5	4				48
22	1	4		2		2	1	5	1	1				17
23	11	9	2	2		4	7	1						36
24	11	8	4	4	1	21	6	1	3	1				60
Total	197	181	26	90	126	267	47	133	19	13	1	1	1	1102

Split Lake, July 17 - August 9, 1984.

Set Number	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Shorthead redhorse	Willow perch	Monieye	Goldeye	Freshwater drum	Burbot	Lake chub	Total
1	7	2	1	13	17										50
2	15	5	6	15	11	6			5	5					81
3	15	13	25	7	12	7			3	20					89
4	5	3	8							8					36
5	2	1	1	10	11	16	3				1				53
6	3	1		3		1		1	2	25	1				11
7	8	2	6	2	1	2	3		1	4					28
8				3	1	5				5					16
9		2	1	3	3	6				12					24
10	1	2				3				4					10
11	1	4		5	1	11	1			4					32
12	3	6	3	6	35	4	2			4	1				65
13	8		9		4	14	2								41
14	4	1	2							1					2
15	4	1	11			5	1								25
16	1	2			5	3				5					16
17	1		6		1	3	1			1					12
18	49	2	17		12	11	2			1			2		96
19	6	6	4	2	7	8		1		4					40
20		11	5	3	8	7				3	1	1			40
21	3	6	1	10	2	3		1	1						31
22	3	6	9	1	12	5			5						39
23	3	18		12	6	3			1						43
24	1	29	11	4	3	13			1						66
25	3	36	4	4	16	2			5						65
26	2	2	1	1	10	13				4	1				35
27	1		7	1	1	49			1						60
28	3	19		2	8	5				9			2		46
29	4	16	2	3	1	9	1			6				1	43
30	11	2	1	3	1	3	2			3					22
31	8	4	7	3	2	9				1					34
32	6	6	3			3	2			3					21
33	11	3	23			5				3					46
34	33	4	5			25	7						2	1	10
35	20	3	10			36	8			4			1	3	81
36	7	5	5	2	4									5	32
Total	256	223	194	114	191	36	4	27		141	5	1	7	35	1331

Stephens Lake, September 1 - 6, 1984.

Set Number	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Mooneye	Lake Chub	Total
1	5	20		8	59					92
2	2	10		10	72					94
3	1			5	194					200
4	10	5		6	7					28
5	8	9		5	5					27
6	2	3	2	7	16					30
7	5	4	1		1	1	4	1		17
8	1		1			1	7			10
9	2	6			1	2		39	3	53
10	1	7		3	8	1		15	6	41
11	5	4	2				3	2		16
12		3	1	1	3	1		8	1	18
13	1	2		1	3			25	2	34
14	1	8	1	2	14			15		41
15		3			4			29		36
16	2	2	2			4	18			28
17	2		8		1	5	11	2	2	31
18						2	2			6
Total	48	86	18	48	388	17	45	138	14	802

Pemichiganau Lake, June 28 - July 1, 1985.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Yellow Perch	Burbot	Total
1	7	4		9			2			22
2	1	8		2	1					12
3	3	11		3	1					19
4	7	15		11	29				1	63
5	5	34		11	3				1	53
6	2	21		20						43
7	7	68		24	12					111
8	4	52	1	10	1	1	2	1		72
Total	36	213	1	90	47	1	4	1	2	395

Costello Lake, May 30 - June 2, 1985

Set No.	Whitefish	Walleye	Northern Pike	Cisco	White Sucker	Yellow Perch	Total
1	2	22	37	7	48	2	118
2	4	21	58	10	91	7	191
3	2	17	38	8	37	18	120
4	1	34	28	4	35	19	121
5	8	18	39	4	75	41	185
6	3	9	35	14	61	5	127
Total	20	121	235	47	347	92	862

Suwannee Lake, June 2 - June 13, 1985.

Set No.	Whitefish	Walleye	Northern Pike	Cisco	White Sucker	Longnose Sucker	Yellow Perch	Burbot	Total
1	30	1	33		23				87
2	7	12	51		40		6		116
3	13	6	60	2	39		6		126
4	43	7	50	2	35	1	2	1	141
5	43	2	56	1	24		28		154
6	33	6	32		72		106		249
Total	169	34	282	5	233	1	148	1	873

Rat Lake, 1985.

Set Number	Date of Set	Whitefish	Walleye	Sauger	Northern pike	Cisco	White sucker	Longnose sucker	Burbot	Yellow perch	Total
1	June 29	96	23		19	15			2		155
2	June 30	40	33		36	9					118
3	July 1	1	11		7			1			20
4	July 1	8	19	1	11		1	1	1		42
5	July 8	12	10		4	6					32
6	July 9	47	7		9	16		1	1		81
7	July 9	107	1			28			4		140
8	July 10	7	14		15	1					37
9	July 10	17	30		16	1			1	4	69
10	July 11	19	39	1	15	14					88
11	July 11	11	27	1	4	4					47
12	July 12	7	21		12	2		1			43
13	July 12	17	27	2	2	6	2				56
14	July 14	16	3		3	55					77
Total		405	265	5	153	157	3	4	9	4	1005

Notigi Lake, June 16 - June 17 and June 24 - 27, 1985.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Burbot	Yellow Perch	Total
1	23	3		2			1		29
2		1		1					2
3	19			2	7				28
4	36	1		9					46
5	3	1			16				20
6	1			12	3				16
7	4	9		30	43			1	87
8	2	9		6	2	1			20
Total	88	24		62	71	1	1	1	248

Wapisa Lake, June 12 - 17, 1985.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Shorthead Redhorse	Burbot	Perch	Total
1	1	13	1	8	11	6		1	2		43
2	1	5	1	2	13	7	1		2		32
3	4	21	1	10	2	21					59
4	5	10	6	3	4	13	1		1		43
5	2	9	1	8	2	9			2		33
6	6	3	3	1		9			3		25
7	2	7	1	1	1	8	1		2		23
8	9	8	3	2		5					27
9	7	21	2	4	8				1		43
10	2	10	3	3	2	8	1			1	30
Total	39	107	22	42	43	86	4	1	13	1	358

Footprint Lake, June 10 - June 16, 1985.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Burbot	Perch	Goldeye	Total
1	40	13		1	8			11			73
2	31	8		2	13			11			65
3	54	21			16			8			99
4	10	6	4	10	62						92
5	26	4		2	71			18			121
6	16	5	1	26	45	8		1	3		105
7	10	6		7	113	2				1	139
Total	187	63	5	48	328	10		49	3	1	694

Threepoint Lake, June 15 - June 27, 1985.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Yellow Perch	Burbot	Total
1	7	6	4	2	1	7				27
2	16	7	1	11	8	21	4	2		70
3	25	21	1	13	27	28	1	1		117
4	7	8	3	7		11		2	1	39
5	6	8	1	9		14				38
6	7	9	3	7		13	1			40
Total	68	59	13	49	36	94	6	5	1	331

Birch Tree Lake, May 29 - June 2, 1985.

Set No.	Whitefish	Walleye	Sauger	Northern Pike	Cisco	White Sucker	Longnose Sucker	Shorthead Redhorse	Yellow Perch	Burbot	Total
1		2	1	1		1				2	7
2	5	1		2		1		2			11
3	5	3	1	4	1	2		2	1		19
4	4	3	1	3	9	1		1			22
5	5	1		5					1		12
6	6	1		1	2	1		1			12
7	3	2		1			4			1	11
8	6	4		3	6	1		1			21
Total	34	17	3	20	18	7	4	7	2	3	115

Appendix 4. Average muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) found in the various species collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985.

Karekwiigamak Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1984	Whitefish	53	358	807	0.23	0.13 - 0.62
	Walleye	51	369	697	1.84	0.54 - 3.52
	Northern pike	52	671	2740	1.99	0.39 - 4.73
	Cisco	41	267	370	0.33	0.17 - 0.74
	White sucker	1	440	1260	0.48	-

Pemichigamau Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1985	Whitefish	36	338	620	0.22	0.12 - 0.33
	Walleye	55	382	810	1.45	0.28 - 2.80
	Sauger	1	312	280	1.65	-
	Northern pike	56	674	2800	1.63	0.23 - 2.95
	Cisco	36	328	540	0.38	0.17 - 0.78
	White sucker	1	379	800	0.07	-
	Longnose sucker	4	315	520	0.14	0.11 - 0.17
	Burbot	2	471	770	0.35	0.24 - 0.45
	Yellow perch	1	138	40	0.27	-

West and Central Nynarski Lakes.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1982	Walleye	33	397	890	1.23	0.24 - 2.99
	Northern pike	12	538	1340	0.54	0.30 - 0.82
1983	Walleye	14	438	1030	0.63	0.32 - 1.21
	Northern pike	5	745	2630	0.48	0.38 - 0.77
1984	Whitefish	52	358	970	0.14	0.03 - 0.66
	Walleye	49	363	670	0.95	0.15 - 2.45
	Northern pike	51	625	2250	1.20	0.12 - 2.48
	Cisco	29	321	560	0.28	0.06 - 0.57
	White sucker	16	402	1110	0.26	0.04 - 0.46
	Longnose sucker	9	435	1360	0.22	0.05 - 0.56
	Burbot	1	426	600	0.10	-
	Yellow Perch	2	143	40	0.08	0.06 - 0.11

Costello Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1979	Walleye	6	431	948	0.51	0.21 - 1.51
1985	Whitefish	20	430	1510	0.07	0.03 - 0.13
	Walleye	53	459	1030	0.52	0.13 - 0.87
	Northern pike	54	475	810	0.26	0.06 - 0.58
	Cisco	42	371	1010	0.09	0.03 - 0.14
	White sucker	31	415	1040	0.11	0.01 - 0.35
	Yellow perch	42	248	260	0.13	0.04 - 0.33

Sweeney Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1979	Walleye	6	525	1136	0.95	0.64 - 1.22
	Northern pike	7	512	759	0.17	0.13 - 0.23
1985	Whitefish	56	399	1250	0.04	0.01 - 0.09
	Walleye	34	416	930	0.14	0.03 - 0.36
	Northern pike	56	495	900	0.19	0.02 - 0.70
	Cisco	5	375	890	0.07	0.06 - 0.08
	White sucker	32	430	1180	0.08	0.03 - 0.15
	Yellow perch	47	204	140	0.04	0.01 - 0.18
	Burbot	1	476	1060	0.02	-
	Longnose sucker	1	222	170	0.01	-

Rat Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1978	Whitefish	5	439	1191	0.40	0.26 - 0.59
	Walleye	26	449	995	2.56	2.17 - 3.51
	Northern pike	24	644	2344	2.05	1.47 - 2.49
	Walleye	25	450	1363	2.32	1.68 - 3.29
1979	Whitefish	24	421	1115	0.32	0.15 - 0.61
	Walleye	22	408	850	1.14	0.68 - 3.37
	Northern pike	1	465	1400	2.37	-
	Whitefish	23	415	1350	0.29	0.13 - 0.70
1983	Walleye	50	376	820	1.79	0.34 - 4.10
	Sauger	1	370	550	2.85	-
	Northern pike	22	599	1710	1.54	0.30 - 2.45
	Cisco	18	285	410	0.38	0.21 - 0.77
1984	Whitefish	50	333	730	0.26	0.07 - 1.00
	Walleye	65	326	530	1.55	0.27 - 3.89
	Sauger	2	295	230	2.08	2.01 - 2.15

Rat Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g} \cdot \text{g}^{-1}$)	Hg range ($\mu\text{g} \cdot \text{g}^{-1}$)
1985	Northern pike	52	601	1920	1.86	0.58 - 3.75
	Cisco	30	290	420	0.47	0.24 - 1.01
	White sucker	17	415	1180	0.50	0.03 - 0.92
	Burbot	11	521	1160	0.51	0.29 - 0.83
	Yellow perch	4	212	170	0.38	0.26 - 0.51
	Whitefish	53	354	950	0.24	0.08 - 0.86
	Walleye	54	388	820	1.55	0.41 - 3.29
	Sauger	5	303	270	1.74	1.13 - 2.08
	Northern pike	58	608	1920	1.60	0.49 - 3.21
	Cisco	30	327	620	0.40	0.16 - 0.83
	White sucker	3	388	1000	0.44	0.16 - 0.60
	Longnose sucker	3	308	480	0.19	0.15 - 0.26
	Burbot	9	544	1200	0.39	0.16 - 0.55
	Yellow perch	4	148	40	0.20	0.17 - 0.24

Notigi Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1978	Walleye	19	422	950	1.41	0.19 - 2.91
1980	Whitefish	6	421	1240	0.12	0.07 - 0.25
	Walleye	4	452	1070	2.90	2.11 - 3.47
	Northern pike	5	788	4430	1.95	1.62 - 2.29
1981	Whitefish	38	309	590	0.23	0.12 - 0.71
	Walleye	29	416	950	1.88	0.95 - 2.55
	Northern pike	50	581	1540	1.70	0.24 - 2.82
	Claco	31	295	460	0.56	0.16 - 1.51
	Burbot	1	485	660	0.60	-
1982	Walleye	6	503	1070	1.23	0.98 - 1.63
	Northern pike	10	738	3270	1.85	1.32 - 2.38
1983	Whitefish	50	350	824	0.20	0.06 - 0.48
	Walleye	26	370	720	1.35	0.40 - 2.95
	Northern pike	44	515	1365	1.18	0.29 - 2.23
	Claco	24	311	449	0.30	0.10 - 0.67
	White sucker	8	397	1200	0.33	0.08 - 0.57

Notigi Lake. Cont'd.

Year	Species	No. of Fish	$\overline{FL}$ (mm)	$\overline{Wt}$ (gm)	$\overline{Hg}$ ($\mu g \cdot g^{-1}$)	Hg range ($\mu g \cdot g^{-1}$)
1985	Whitefish	50	314	580	0.26	0.15 - 0.70
	Walleye	25	385	850	1.20	0.34 - 2.58
	Northern pike	55	657	2140	1.72	0.56 - 2.87
	Cisco	33	268	330	0.44	0.14 - 0.80
	White sucker	1	526	1900	0.71	-
	Burbot	1	466	640	0.52	-
	Yellow perch	1	200	160	0.20	-

Mapiou Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1977	Walleye	91	411	860	1.17	0.14 - 3.03
	Northern pike	38	672	2430	1.08	0.32 - 2.25
1983	Whitefish	41	360	780	0.31	0.09 - 0.82
	Walleye	50	276	340	1.05	0.33 - 2.46
	Sauger	37	261	200	1.85	0.37 - 2.84
	Northern pike	53	645	2300	1.97	0.57 - 3.42
	Cisco	25	294	380	0.39	0.21 - 0.69
	White sucker	25	426	8120	0.47	0.22 - 0.77
	Longnose sucker	3	460	1570	0.60	0.57 - 0.62
	Yellow perch	3	221	190	0.40	0.31 - 0.54
1985	Whitefish	39	328	560	0.39	0.16 - 1.05
	Walleye	64	366	580	1.42	0.29 - 2.34
	Sauger	22	275	220	1.64	0.82 - 2.48
	Northern pike	41	597	1840	1.76	0.40 - 3.38
	Cisco	32	320	430	0.48	0.28 - 0.84

Wapisiu Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1985	White sucker					
	Longnose sucker	4	412	1130	0.40	0.18 - 0.53
	Shorthead redhorse sucker	1	386	900	0.38	-
	Burbot	12	499	1050	0.43	0.17 - 1.10
	Yellow perch	1	158	80	0.20	-

Macheewin Lake.

Year	Species	No. of Fish	FL (mm)	WT (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1981	Walleye	6	354	686	0.66	0.33 - 0.89
	Northern pike	5	661	1711	0.35	0.29 - 0.45
1982	Walleye	6	352	618	0.76	0.37 - 0.96
	Northern pike	10	683	2149	0.87	0.41 - 1.78
1984	Whitefish	50	353	710	0.08	0.02 - 0.25
	Walleye	44	352	590	0.36	0.08 - 0.86
	Sauger	20	276	210	0.48	0.37 - 0.68
	Northern pike	57	521	1100	0.56	0.08 - 1.50
	Clasco	27	245	300	0.22	0.06 - 0.61
	White sucker	38	350	750	0.11	0.01 - 0.44
	Burbot	1	494	840	0.11	-
	Yellow perch	24	168	70	0.11	0.04 - 0.27

Osik Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1982	Walleye	6	438	890	1.12	1.06 - 1.23
	Northern pike	5	724	2569	1.24	1.12 - 1.36
1983	Walleye	12	390	758	0.81	0.39 - 1.05
	Northern pike	5	713	2485	1.67	0.41 - 2.21
1984	Whitefish	58	369	860	0.19	0.07 - 0.54
	Walleye	51	343	650	0.79	0.20 - 1.68
	Northern pike	60	498	1180	1.15	0.22 - 2.76
	Cisco	38	305	510	0.38	0.13 - 0.96
	White sucker	34	376	880	0.33	0.06 - 0.60
	Burbot	4	518	1250	0.49	0.13 - 0.84
	Yellow perch	6	239	250	0.32	0.16 - 0.54

Footprint Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	$\overline{\text{Hg}}$ ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1978	Walleye	20	382	700	0.98	0.70 - 2.61
	Sauger	2	345	450	0.65	0.54 - 0.77
	Northern pike	18	455	690	0.70	0.44 - 0.90
	Whitefish	4	340	660	0.22	0.18 - 0.30
1980	Walleye	6	394	770	1.25	0.73 - 1.72
	Northern pike	4	526	1210	1.20	1.06 - 1.53
	Cisco	1	325	580	0.48	-
	Whitefish	22	316	490	0.17	0.09 - 0.26
1981	Walleye	30	375	620	1.10	0.71 - 1.76
	Northern pike	14	520	1040	1.12	0.83 - 1.74
	Cisco	15	309	520	0.37	0.23 - 0.62
	White sucker	10	380	830	0.31	0.14 - 0.52
	Burbot	1	570	1210	0.31	-
	Yellow perch	15	261	310	0.40	0.25 - 0.54
	Whitefish	25	366	853	0.18	0.06 - 0.48

Footprint Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1983	Walleye	33	353	465	1.13	0.36 - 1.85
	Sauger	25	317	310	1.69	0.46 - 2.41
	Northern pike	41	477	860	1.20	0.45 - 2.40
	Cisco	24	296	380	0.35	0.13 - 0.57
	White sucker	18	389	840	0.35	0.09 - 0.60
	Burbot	21	479	940	0.35	0.17 - 0.85
	Whitefish	52	359	830	0.11	0.03 - 0.31
	Walleye	54	379	650	1.13	0.31 - 1.87
	Sauger	7	306	320	1.23	0.35 - 2.09
	Northern pike	51	444	690	1.02	0.18 - 3.59
1984	Cisco	32	274	350	0.29	0.10 - 1.21
	White sucker	28	402	930	0.31	0.05 - 0.46
	Longnose sucker	1	384	660	0.36	-
	Burbot	1	656	2330	0.41	-
	Yellow perch	9	243	250	0.36	0.22 - 0.49

Footprint Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1985	Whitefish	53	341	730	0.15	0.06 - 0.42
	Walleye	57	253	250	0.70	0.28 - 1.50
	Sauger	5	354	430	1.68	1.50 - 1.91
	Northern pike	48	431	560	0.85	0.29 - 1.73
	Cisco	52	242	310	0.32	0.14 - 0.86
	White sucker	10	377	890	0.32	0.16 - 0.58
	Burbot	36	450	880	0.32	0.11 - 0.75
	Yellow perch	3	200	150	0.22	0.14 - 0.31
	Goldeye	1	349	530	0.55	-

Threepoint Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1980	Whitefish	5	429	1150	0.39	0.34 - 0.52
	Walleye	5	403	810	1.49	1.16 - 1.81
	Northern pike	5	688	2720	1.18	0.71 - 2.08
	Whitefish	16	333	610	0.23	0.11 - 0.41
	Walleye	42	381	660	1.35	0.84 - 2.05
1981	Sauger	3	350	420	2.31	2.06 - 2.56
	Northern pike	28	517	1050	1.33	0.44 - 2.27
	Cisco	15	308	500	0.39	0.26 - 0.63
	White sucker	25	407	1030	0.42	0.16 - 0.62
	Burbot	2	497	715	1.08	0.79 - 1.38
	Whitefish	25	366	850	0.24	0.10 - 0.56
	Walleye	50	336	530	1.36	0.32 - 2.70
	Sauger	43	265	217	1.61	0.40 - 2.85
	Northern pike	50	493	1150	1.58	0.25 - 3.53
	White sucker	19	383	923	0.44	0.17 - 0.91
1983	Whitefish	25	366	850	0.24	0.10 - 0.56
	Walleye	50	336	530	1.36	0.32 - 2.70
	Sauger	43	265	217	1.61	0.40 - 2.85
	Northern pike	50	493	1150	1.58	0.25 - 3.53
	White sucker	19	383	923	0.44	0.17 - 0.91

Threepoint Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1983	Longnose sucker	25	415	1180	0.52	0.13 - 0.91
	Shorthead redhorse sucker	3	373	870	0.48	0.38 - 0.65
1984	Yellow perch	6	215	180	0.43	0.31 - 0.58
	Whitefish	51	361	770	0.25	0.07 - 1.07
	Walleye	54	351	580	1.15	0.33 - 2.56
	Sauger	17	300	290	1.49	0.48 - 2.09
	Northern pike	51	561	1530	1.57	0.36 - 3.18
	Cisco	31	302	520	0.29	0.12 - 0.57
	White sucker	33	404	1030	0.45	0.11 - 0.85
	Longnose sucker	9	433	1230	0.53	0.16 - 0.87
1985	Goldeye	2	358	550	0.71	0.70 - 0.73
	Yellow perch	4	243	250	0.47	0.38 - 0.55
	Burbot	2	392	555	0.24	0.09 - 0.40
	Whitefish	53	338	650	0.24	0.09 - 0.55
	Walleye	59	337	520	1.01	0.29 - 1.99

Threepoint Lake. Cont'd.

Year	Species	No. of Fish	$\overline{PL}$ (mm)	$\overline{Wt}$ (gm)	$\overline{Hg}$ ($\mu g \cdot g^{-1}$)	Hg range ($\mu g \cdot g^{-1}$)
1985	Sauger	13	316	300	1.72	1.35 - 2.03
	Northern pike	49	532	1520	1.28	0.29 - 2.63
	Cisco	24	333	560	0.33	0.12 - 0.80
	White sucker	37	404	990	0.43	0.12 - 0.90
	Longnose sucker	6	414	1060	0.58	0.22 - 0.77
	Burbot	1	281	160	0.18	-
	Yellow perch	5	207	150	0.28	0.16 - 0.47

Muskvatim Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1979	Walleye	57	415	860	0.92	0.64 - 2.18
	Northern pike	55	562	1570	0.88	0.34 - 2.77
1980	Walleye	19	413	890	1.00	0.78 - 1.41
	Northern pike	7	605	2160	1.03	0.79 - 1.20
1981	Whitefish	28	398	1070	0.33	0.18 - 0.78
	Walleye	34	399	710	0.89	0.62 - 1.36
	Northern pike	25	514	1130	0.80	0.47 - 1.98
	Cisco	22	319	600	0.36	0.23 - 0.83
	White sucker	19	403	980	0.52	0.15 - 0.85
	Longnose sucker	1	380	750	0.41	-
	Shorthead redhorse sucker	3	395	1240	0.39	0.27 - 0.47
1982	Northern pike	5	682	2880	1.35	0.81 - 2.12
1983	Walleye	18	433	846	0.82	0.48 - 1.21
1984	Whitefish	56	339	810	0.20	0.04 - 0.51

Muskwaite Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1984	Walleye	57	367	650	0.66	0.14 - 2.20
	Sauger	51	244	150	1.13	0.25 - 1.85
	Northern pike	38	449	790	1.02	0.12 - 2.49
	Cisco	32	323	690	0.25	0.09 - 0.67
	White sucker	32	359	720	0.21	0.04 - 0.49
	Longnose sucker	7	386	1000	0.34	0.07 - 0.76
	Burbot	5	541	1280	0.35	0.23 - 0.57
	Yellow perch	32	269	160	0.30	0.06 - 0.53

Birch Tree Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1985	Whitefish	34	343	710	0.27	0.13 - 0.44
	Walleye	17	319	480	1.13	0.45 - 2.08
	Sauger	3	311	340	1.30	1.08 - 1.60
	Northern pike	20	568	1994	1.17	0.37 - 2.37
	Cisco	18	257	270	0.25	0.11 - 0.48
	White sucker					
	Longnose sucker	4	410	950	0.39	0.18 - 0.52
	Shorthead redhorse sucker	7	404	1080	0.48	0.21 - 0.68
	Burbot	3	366	650	0.25	0.13 - 0.40
	Yellow perch	2	262	300	0.59	0.44 - 0.74

Apussigamasi Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1982	Walleye	6	504	1580	2.37	1.84 - 2.90
	Northern pike	10	794	4240	1.17	0.39 - 2.49
1983	Walleye	5	530	2410	1.77	1.36 - 2.10
	Northern pike	5	734	3408	1.40	1.02 - 1.69
1984	Whitefish	33	369	860	0.32	0.14 - 0.79
	Walleye	55	292	420	1.04	0.28 - 2.54
	Sauger	20	323	370	1.49	0.36 - 2.66
	Northern pike	54	486	1150	1.13	0.15 - 2.82
	Cisco	40	253	310	0.31	0.06 - 1.02
	White sucker	45	375	930	0.38	0.13 - 0.84
	Longnose sucker	31	438	1350	0.46	0.07 - 0.83
	Shorthorned redbreast sucker	10	382	860	0.41	0.18 - 0.62
	Burbot	1	188	90	0.14	
	Yellow perch	1	185	110	0.28	
	Mooneye	30	231	180	0.24	0.14 - 0.41

Sipiwek Lake.

Year	Species	No. of Fish	FL (mm)	Wt (ga)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1972	Walleye	54	414	1100	0.84	0.54 - 1.40
	Northern pike	155	563	1610	0.64	0.10 - 1.25
1973	Walleye	54	424	1100	0.74	0.35 - 1.04
	Northern pike	141	620	1990	0.67	0.36 - 1.29
1974	Walleye	22	447	1040	0.68	0.11 - 1.12
	Northern pike	19	646	2140	0.74	0.25 - 1.63
1976	Goldeye	12	350	570	0.28	0.10 - 0.50
	Walleye	65	447	1240	0.95	0.45 - 1.75
1977	Sauger	1	400	730	1.03	
	Northern pike	157	564	1640	0.66	0.24 - 1.97
	Yellow perch	3	320	510	0.53	0.43 - 0.62
	Whitefish	2	473	1900	0.13	0.07 - 0.20
1978	Walleye	173	443	1180	0.75	0.13 - 1.66
	Northern pike	42	715	3490	0.93	0.29 - 1.78
	Walleye	47	399	800	0.84	0.16 - 1.39

Sipiwesk Lake. Cont'd.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1978	Northern pike	12	516	1480	0.72	0.44 - 1.09
1979	Walleye	54	439	1030	0.86	0.16 - 2.28
	Northern pike	30	701	2920	0.96	0.40 - 2.18
1980	Walleye	45	485	1200	0.89	0.21 - 1.39
	Northern pike	57	684	2620	0.93	0.42 - 3.55
1981	Walleye	271	430	1000	0.78	0.09 - 2.16
	Northern pike	280	651	2270	0.87	0.13 - 2.48
1982	Walleye	21	465	1120	0.80	0.41 - 1.70
	Northern pike	215	687	2930	1.00	0.14 - 2.93
1983	Whitefish	16	396	1220	0.05	0.01 - 0.12
	Walleye	56	332	480	0.63	0.07 - 1.21
	Sauger	33	272	220	0.41	0.11 - 0.82
	Northern pike	43	547	1400	0.55	0.07 - 1.60
	Cisco	26	279	390	0.06	0.02 - 0.16
	White sucker	25	372	950	0.12	0.02 - 0.72

Siptweck Lake. Cont'd.

Year	Species	No. of Fish	$\overline{FL}$ (mm)	$\overline{WC}$ (gm)	$\overline{Hg}$ ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1983	Shorthead redhorse sucker	22	331	690	0.19	0.02 - 0.68
	Yellow perch	3	207	170	0.14	0.09 - 0.23
	Mooneye	25	279	270	0.13	0.07 - 0.35
	Freshwater drum	6	420	1170	0.16	0.07 - 0.25

Assean Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1981	Whitefish	43	385	910	0.06	0.02 - 0.13
	Walleye	52	391	720	0.32	0.15 - 0.75
	Northern pike	34	610	1900	0.30	0.11 - 0.90
	Cisco	7	304	430	0.07	0.04 - 0.11
	White sucker	14	412	1110	0.07	0.03 - 0.14
1982	Yellow perch	2	255	270	0.09	0.08 - 0.10
	Walleye	6	448	980	0.33	0.24 - 0.48
	Northern pike	5	805	4240	0.51	0.29 - 0.92
	Whitefish	25	409	1130	0.05	0.01 - 0.14
1985	Walleye	27	379	690	0.22	0.09 - 0.43
	Northern pike	18	577	1490	0.24	0.12 - 0.54

Split Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1972	Walleye	30	414	900	0.47	0.22 - 1.07
	Northern pike	64	581	1620	0.41	0.12 - 0.88
1973	Walleye	7	429	970	0.75	0.35 - 1.01
	Sauger	1	292	250	0.72	
1974	Northern pike	33	767	4510	0.58	0.19 - 1.32
	Walleye	19	448	960	0.54	0.17 - 0.97
1976	Whitefish	1	400	1250	0.07	-
	Walleye	52	467	1310	0.68	0.28 - 1.28
	Sauger	3	311	300	0.33	0.21 - 0.47
	Northern pike	101	722	3410	0.59	0.16 - 1.14
1978	Walleye	66	446	940	0.63	0.24 - 2.67
	Northern pike	5	749	3040	0.49	0.20 - 0.94
1979	Walleye	6	428	940	0.32	0.17 - 0.43
	Northern pike	5	827	4860	0.79	0.63 - 1.00
1980	Walleye	15	492	1430	0.52	0.27 - 0.82

Split.cont'd.

Year	Species	No. of Fish	FL (mm)	WT (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1981	Walleye	11	517	1430	0.93	0.44 - 1.67
	Northern pike	25	703	3040	0.68	0.26 - 1.54
1982	Walleye	13	391	650	0.66	0.47 - 1.07
	Sauger	7	303	310	0.70	0.46 - 1.17
	Northern pike	19	618	2470	0.62	0.18 - 1.21
1983	Whitefish	28	334	687	0.08	0.03 - 0.21
	Walleye	59	380	660	0.56	0.08 - 1.02
	Sauger	51	279	241	0.63	0.24 - 1.23
	Northern pike	53	550	1410	0.45	0.10 - 1.19
	Cisco	17	254	269	0.09	0.01 - 0.38
	White sucker	29	399	1137	0.21	0.02 - 0.43
	Longnose sucker	13	409	974	0.29	0.05 - 0.50
	Burbot	15	399	465	0.11	0.03 - 0.31
	Yellow perch	2	255	250	0.36	0.26 - 0.47
	Mooneye	25	253	220	0.11	0.05 - 0.20

Split. Continued.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1983	Goldeye	1	205	300	0.21	
	Freshwater drum	4	431	1345	0.21	0.15 - 0.25
1984	Whitefish	31	348	720	0.08	0.04 - 0.26
	Walleye	70	353	550	0.38	0.08 - 0.89
	Sauger	48	268	230	0.41	0.15 - 1.10
	Northern pike	56	519	1200	0.31	0.07 - 0.86
	Cisco	29	228	230	0.06	0.03 - 0.10
	White sucker	28	351	830	0.12	0.02 - 0.24
	Longnose sucker	6	385	770	0.24	0.10 - 0.39
	Shorthead redhorse sucker	1	342	550	0.08	
	Burbot					
	Yellow perch	27	178	110	0.10	0.04 - 0.32
	Mooneye	31	267	300	0.16	0.08 - 0.34
	Goldeye	4	355	540	0.46	0.39 - 0.62
	Freshwater drum	1	448	1410	0.21	

Stephens Lake.

Year	Species	No. of Fish	FL (mm)	Wt (gm)	Hg ($\mu\text{g}\cdot\text{g}^{-1}$)	Hg range ($\mu\text{g}\cdot\text{g}^{-1}$)
1981	Walleye	5	558	1670	1.89	1.39 - 2.24
1983	Whitefish	20	398	1304	0.24	0.07 - 0.45
	Walleye	9	465	1460	1.78	0.97 - 2.60
	Sauger	25	292	310	0.69	0.17 - 1.36
	Northern pike	45	609	1848	1.41	0.37 - 3.66
	Cisco	26	225	200	0.17	0.08 - 0.43
	White sucker	6	325	678	0.10	0.06 - 0.17
	Longnose sucker	12	348	690	0.20	0.05 - 0.36
	Mooneye	25	224	160	0.15	0.09 - 0.29
1984	Whitefish	40	352	950	0.21	0.07 - 0.54
	Walleye	68	341	690	0.70	0.12 - 2.22
	Sauger	15	313	380	0.75	0.22 - 1.45
	Northern pike	44	625	2485	1.47	0.30 - 3.30
	Cisco	26	233	210	0.21	0.08 - 0.40
	White sucker	15	379	1000	0.15	0.04 - 0.40
	Longnose sucker	32	364	720	0.22	0.08 - 0.46
	Mooneye	30	229	160	0.17	0.09 - 0.27

Appendix 5. Average muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) for length interval categories of whitefish, walleye and northern pike collected from lakes located on the Rat-Burntwood and Nelson River systems, 1972 - 1985. Fork lengths (FL) are given in mm. "s" is the standard deviation around the average muscle Hg level.

Karsakuwigamak Lake.

Length interval	Whitefish 1984			Walleye 1984			Northern pike 1984		
	n	$\bar{F}$	$\bar{H}$ s	n	$\bar{F}$	$\bar{H}$ s	n	$\bar{F}$	$\bar{H}$ s
100-149									
							100-199		
150-199	2	169	0.16 0.03	3	185	0.58 0.03	200-299		
200-249				5	236	0.81 0.12	300-399	5	319 0.58 0.11
250-299	5	281	0.18 0.04	6	272	0.84 0.18	400-499	2	459 1.10 0.05
300-349	19	325	0.20 0.03	8	324	1.48 0.46	500-599	7	569 1.62 0.40
350-399	10	372	0.25 0.07	5	368	1.81 0.37	600-699	13	644 1.88 0.38
400-449	14	424	0.25 0.06	13	420	2.64 0.43	700-799	14	732 2.38 0.72
450-499	3	459	0.39 0.21	4	477	2.97 0.30	800-899	6	847 2.30 0.66
500-549				6	530	3.24 0.25	900-999	1	934 3.11 1.53
550-599				1	554	2.94 -			

Pemichigamau Lake.

Length interval	Whitefish 1985			Walleye 1985			Northern pike 1985		
	n	$\overline{Fl}$	$\overline{Hg}$ s	n	$\overline{Fl}$	$\overline{Hg}$ s	n	$\overline{Fl}$	$\overline{Hg}$ s
100-149									
							Length interval		
150-199	4	179	0.17 0.03	5	173	0.33 0.03	100-199	2	236 0.35 0.05
200-249	3	222	0.23 0.06	7	227	0.65 0.07	200-299	3	345 0.58 0.30
250-299	5	280	0.23 0.05	2	267	0.57 0.01	300-399	3	423 0.86 0.15
300-349	9	330	0.21 0.07	5	337	1.21 0.24	400-499	2	553 1.18 0.12
350-399	7	369	0.22 0.04	11	370	1.37 0.26	500-599	19	659 1.66 0.34
400-449	6	422	0.25 0.06	10	424	1.61 0.19	600-699	17	738 1.81 0.38
450-499	2	457	0.30 0.01				700-799	7	849 2.29 0.35
500-549				10	524	2.37 0.24	800-899	2	915 1.67 0.04
550-599				5	565	2.29 0.12	900-999	1	1010 2.37 -
							1000-1099		

Mynarski Lake.

Length interval	Whitefish			Walleye												
	1984			1982			1983			1984						
	n	$\bar{F}$	$\bar{H}_g$	n	$\bar{F}$	$\bar{H}_g$	n	$\bar{F}$	$\bar{H}_g$	s	n	$\bar{F}$	$\bar{H}_g$	s		
100-149	2	139	0.07	-												
150-199	2	152	0.07	0.01								2	164	0.16	0.14	
200-249	3	216	0.06	0.02								10	234	0.22	0.02	
250-299	2	259	0.06	0.01								3	270	0.23	0.04	
300-349	18	325	0.08	0.05	7	334	1.10	0.45				2	316	0.28	0.03	
350-399	9	382	0.18	0.22	9	378	0.97	0.61	1	385	0.38	-	9	378	1.00	0.70
400-449	7	427	0.16	0.06	12	422	1.42	1.05	9	431	0.62	0.29	16	427	1.39	0.53
450-499	4	479	0.24	0.16	5	461	1.40	0.74	4	468	0.72	0.07	5	480	1.82	0.55
500-549	4	524	0.30	0.20								1	510	1.03	-	
550-599	1	584	0.52	-								1	550	1.14	-	

Rat Lake whitefish.

Length interval	1978			1980			1983			1984			1985							
	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$					
100-149										3	141	0.22	0.06							
150-199										3	177	0.19	0.01	4	190	0.19	0.06			
200-249										2	222	0.26	0.06	7	225	0.18	0.05			
250-299										6	287	0.22	0.04	7	277	0.19	0.06			
300-349										16	322	0.22	0.08	11	326	0.18	0.04			
350-399							3	327	0.16	0.03										
400-449				7	379	0.26	0.06	5	385	0.24	0.04	5	371	0.42	0.33	5	377	0.20	0.05	
450-499	5	439	0.40	-	11	417	0.30	0.08	8	415	0.26	0.06	10	423	0.26	0.07	5	4134	0.18	0.09
500-549				5	469	0.45	0.12	6	471	0.40	0.16	5	463	0.35	0.08	6	470	0.25	0.04	
550-599				1	525	0.32	-	1	500	0.58	-					8	519	0.52	0.22	
							-							2	579	3.10	0.02			

Rat Lake valleys.

Length Interval	1978			1979			1980			1983			1984			1985					
	n	$\overline{FI}$	$\overline{HG}$	n	$\overline{FI}$	$\overline{HG}$	n	$\overline{FI}$	$\overline{HG}$	n	$\overline{FI}$	$\overline{HG}$	n	$\overline{FI}$	$\overline{HG}$	n	$\overline{FI}$	$\overline{HG}$			
50-99													2	79	0.38	0.16					
100-149													1	116	0.31	-	1	104	0.41		
150-199																					
200-249										1	184	0.34	-	3	181	0.35	0.09	7	224	0.63	0.17
250-299										6	221	0.54	0.11	12	223	0.63	0.15	5	279	0.78	0.17
300-349										5	259	0.73	0.14	7	277	0.91	0.20	7	332	1.03	0.29
350-399										1	295	0.68									
400-449										1	335	0.71									
450-499										3	383	0.96	0.10	11	324	1.48	0.51	8	383	1.59	0.50
500-549										14	377	2.02	0.52	11	366	1.71	0.18	11	422	1.67	0.40
550-599										6	425	2.06	0.43	9	421	2.33	0.41	4	469	1.94	0.64
										9	473	2.40	0.35	5	470	2.99	0.48	7	520	2.53	0.29
										3	505	3.14	0.84	4	517	3.37	0.52	3	571	2.71	0.63
										2	579	3.10	0.02					1	616	3.29	-

Rat Lake pike.

Length Interval	1978			1980			1983			1984			1985					
	n	$\overline{FI}$	$\overline{Hg}$	n	$\overline{FI}$	$\overline{Hg}$	n	$\overline{FI}$	$\overline{Hg}$	n	$\overline{FI}$	$\overline{Hg}$	n	$\overline{FI}$	$\overline{Hg}$			
100-199																		
200-299																		
300-399																		
400-499	3	452	1.71	0.15			6	445	1.17	0.56	7	353	0.90	0.57	4	358	0.70	0.22
500-599	4	565	2.14	0.21			3	555	1.63	0.52	9	447	1.08	0.25	9	445	0.93	0.19
600-699	8	639	2.05	0.37			8	645	1.89	0.43	8	545	1.68	0.27	16	550	1.51	0.29
700-799	9	748	2.13	0.24	1	628	2.37	-		10	630	2.01	0.61	15	646	1.79	0.33	
800-899							4	720	1.36	0.29	12	740	2.53	0.70	7	744	1.86	0.26
900-999							1	806	1.46	-	4	835	2.80	0.87	6	853	2.49	0.43
1000-1099											2	936	2.66	1.54	1	982	2.75	-

Notigi Lake whitefish.

Length interval	1980			1981			1983			1985		
	n	$\overline{Fl}$	$\overline{Hg}$	s	n	$\overline{Fl}$	$\overline{Hg}$	s	n	$\overline{Fl}$	$\overline{Hg}$	s
100-149												
150-199									5	163	0.17	0.03
200-249					12	235	0.18	0.04				
250-299					10	277	0.19	0.05	7	281	0.15	0.04
300-349					7	316	0.20	0.03	8	324	0.19	0.05
350-399	1	395	0.16		2	380	0.26	0.15	17	375	0.19	0.06
400-449	5	426	0.12	0.08	4	433	0.35	0.08	10	425	0.21	0.06
450-499					2	450	0.35	0.02	1	470	0.39	-
500-549					1	540	0.71	-	2	514	0.42	0.09
550-599									2	510	0.48	0.32

Motigi Lake valleye.

[illegible]

Notigi lake northern pike.

Length Interval	Year														
	1980			1981			1982			1983			1985		
	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$
100-199															
200-299															
300-399				1	330	0.24	-						6	252	0.32
400-499				4	469	1.54	0.49						7	335	0.55
500-599				24	556	1.64	0.48						6	462	1.09
600-699				20	637	1.82	0.41						7	549	1.42
700-799								1	670	1.95	-		12	644	1.57
800-899				2	750	2.07	0.21	1	740	2.73	-	9	746	1.84	
				3	813	1.87	0.37					5	729	1.87	
													3	833	2.40

Wapitu Lake northern pike.

Length Interval	Year					
	1977			1983		
	n	$\bar{F}$	$\bar{H}$	n	$\bar{F}$	$\bar{H}$
100-199						
200-299						
300-399						
400-499						
500-599						
600-699						
700-799						
800-899						
900-999						

Macheewin Lake.

Length interval	Whitefish				Walleye			
	1984		1981		1982		1984	
	n	$\overline{FI}$ $\overline{Hg}$ s	n	$\overline{FI}$ $\overline{Hg}$ s	n	$\overline{FI}$ $\overline{Hg}$ s	n	$\overline{FI}$ $\overline{Hg}$ s
100-149	1	147 0.03						
150-199	2	156 0.03 0.01						
200-249								
250-299	3	281 0.04 0.01						
300-349	12	324 0.04 0.02	2	330 0.34 0.01	2	320 0.56 0.26	6	328 0.22 0.03
350-399	21	379 0.08 0.05	4	366 0.82 0.08	4	368 0.86 0.08	8	386 0.46 0.20
400-449	11	411 0.12 0.07					19	417 0.47 0.16
450-499							2	458 0.46 0.14
500-549								

Macheewin Lake plke.

Length interval	1981				1982				1984			
	n	$\overline{FI}$	$\overline{Hg}$	s	n	$\overline{FI}$	$\overline{Hg}$	s	n	$\overline{FI}$	$\overline{Hg}$	s
100-199												
200-299									3	235	0.11	0.04
300-399									5	358	0.21	0.04
400-499									12	471	0.46	0.21
500-599									25	549	0.59	0.24
600-699	5	661	0.35	0.06	8	663	0.71	0.29	10	636	0.79	0.24
700-799					1	720	1.30	-	2	752	1.16	0.48
800-899					1	805	1.78	-				
900-999												
1000-1099												

Osik Lake.

Length Interval	Whitefish					Walleye				
	1984					1983				
	n	$\bar{F}\bar{I}$	$\bar{H}\bar{g}$	s		n	$\bar{F}\bar{I}$	$\bar{H}\bar{g}$	s	
100-149										
150-199	4	178	0.12	0.03						
200-249										
250-299	4	278	0.12	0.04						
300-349	7	324	0.19	0.03		2	335	0.72	0.19	
350-399	22	379	0.19	0.05		5	372	0.82	0.14	
400-449	17	418	0.17	0.06		4	423	0.80	0.31	
450-499	4	477	0.38	0.12		3	458	1.10	0.12	
500-549										
550-599										
						2	141	0.25	0.07	
						10	166	0.27	0.04	
						4	223	0.42	0.03	
						1	267	0.56	-	
						5	336	0.51	0.04	
						3	369	1.00	0.07	
						17	424	1.06	0.27	
						7	470	1.17	0.16	
						1	549	1.37	-	
						1	577	1.68	-	

[illegible]

Footprint Lake walleye.

Length Interval	1978		1980		1981		1983		1984		1985	
	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$
150-199							1	0.41	1	0.52	-	26 167 0.44 0.07
200-249							3	215 0.81 0.42	7	212 0.36 0.04		11 229 0.55 0.05
250-299												
											</	

Footprint Lake northern pike.

Length Interval	1978		1980		1981		1983		1984		1985			
	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$	n	$\overline{FI}$ $\overline{HG}$		
100-199														
200-299									2	258	0.19	0.14		
300-399							11	356	0.82	0.26				
400-499	17	451 0.70 0.11	1	415 1.13	-	6	457 1.01 0.14	12	434 1.04 0.24	20	369 0.68 0.24	17	361 0.59 0.23	
500-599	1	515 0.72	-	2	533 1.31 0.31	6	549 1.09 0.11	11	529 1.47 0.57	16	441 0.89 0.18	23	441 0.92 0.26	
600-699			1	625 1.06		2	623 1.50 0.34	6	640 1.70 0.48	6	532 1.48 0.31	7	545 1.30 0.23	
700-799									6	636 2.14 0.96	1	600 0.79	-	
800-899									1	702 1.87	-			

Threepoint Lake whitefish.

Length interval	1980			1981			1983			1984			1985		
	n	$\bar{P}$	$\bar{H}_g$	n	$\bar{P}$	$\bar{H}_g$	n	$\bar{P}$	$\bar{H}_g$	n	$\bar{P}$	$\bar{H}_g$	n	$\bar{P}$	$\bar{H}_g$
100-149															
150-199															
200-249															
250-299															
300-349															
350-399															
400-449															
450-499															
500-549															
550-599															

	1	182	0.08	-	3	185	0.12	-
	2	225	0.08	0.01	4	219	0.13	0.02
	4	278	0.11	0.02	9	274	0.13	0.03
	14	324	0.18	0.07	11	324	0.20	0.05
	12	379	0.25	0.10	13	375	0.25	0.10
	17	416	0.38	0.21	10	423	0.39	0.14
	1	498	0.20	-	3	456	0.41	0.11

	5	276	0.21	0.05	2	261	0.13	0.03
	5	319	0.20	0.02	6	336	0.19	0.04
	3	367	0.23	0.16	12	379	0.24	0.06
	3	420	0.33	0.04	5	413	0.36	0.12
	1	390	0.52	-				
	3	433	0.35	0.02				
	1	455	0.38	-				

Threepoint Lake walleye.

Length Interval	1980			1981			1983			1984			1985							
	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$					
100-149							3	143	0.38	0.07			1	125	0.36	-				
150-199							3	163	0.42	0.04	6	171	0.39	0.06	6	180	0.37	0.07		
200-249							7	220	0.75	0.29	5	229	0.58	0.15	10	228	0.54	0.09		
250-299							5	273	1.03	0.16	5	273	0.66	0.22	1	274	0.77	-		
300-349				7	324	1.32	0.25	2	315	0.97	0.26	5	324	0.88	0.12	11	326	0.95	0.21	
350-399	2	375	1.49	0.46	23	375	1.30	0.23	9	374	1.72	0.58	13	369	1.38	0.34	17	378	1.17	0.30
400-449	2	403	1.46	0.23	10	416	1.41	0.25	17	418	1.75	0.36	11	423	1.67	0.39	5	422	1.58	0.13
450-499	1	460	1.54	-	1	455	1.88	-	4	463	1.97	0.32	6	468	1.48	0.18	5	480	1.60	0.30
500-549													3	515	1.29	0.12	3	528	1.55	0.25

Threepoint Lake pike.

Length interval	1980			1981			1983			1984			1985							
	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$					
100-199																				
200-299							8	261	0.62	0.56	2	264	0.37	0.01	5	273	0.37	0.09		
300-399							6	332	0.90	0.30	9	341	0.74	0.37	9	335	0.73	0.28		
400-499				12	456	1.10	0.36	10	471	1.51	0.40	4	458	1.27	0.19	6	440	1.26	0.24	
500-599				12	536	1.54	0.35	14	541	1.86	0.28	14	554	1.63	0.40	10	556	1.58	0.30	
600-699	3	657	1.40	0.60	3	610	1.29	0.03	6	641	1.88	0.45	11	655	2.01	0.42	9	639	1.58	0.43
700-799	2	735	0.85	0.19	1	730	1.59	-	6	743	2.72	0.45	10	741	2.09	0.57	6	732	1.67	0.29
800-899													1	806	1.69	-	4	834	1.67	0.65

Muskwatim Lake whitefish.

Length interval	1981			1984		
	n	$\overline{FL}$	$\overline{Hg}$ s	n	$\overline{FL}$	$\overline{Hg}$ s
100-149				1	148	0.08 -
150-199				7	162	0.07 0.01
200-249				4	219	0.07 0.02
250-299	1	280	0.18 -	6	283	0.09 0.02
300-349	1	310	0.23	4	316	0.11 0.03
350-399	13	382	0.30	13	375	0.18 0.06
400-449	9	417	0.32	17	419	0.34 0.09
450-499	4	458	0.52	4	467	0.32 0.06
500-549						
550-599						

Wuskwatim Lake walleye.

Length interval	1979			1980			1981			1983			1984		
	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$
100-149															
150-199															
200-249															
250-299	1	290	0.90	-									6	167	0.22 0.06
300-349	1	340	0.64	-	1	345	0.79	-	1	330	1.09	-	2	242	0.25 0.04
350-399	11	389	0.78	0.09	4	375	0.88	0.12	13	378	0.81	0.10	4	280	0.28 0.06
400-449	39	421	0.95	0.26	12	420	1.01	0.14	18	412	0.95	0.21	10	326	0.33 0.06
450-499	5	464	0.98	0.21	1	450	1.08	-	2	455	0.82	0.03	9	379	0.84 0.55
500-549					1	510	1.41	-					18	424	0.90 0.28
550-599													4	474	0.84 0.17
													2	544	1.00 0.46
													2	573	1.21 0.38

Wuskwatim Lake pike.

Length interval	1979			1980			1981			1982			1984		
	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$	n	$\overline{PI}$	$\overline{HG}$
100-199															
200-299	2	265	0.49	0.21									5	261	0.25 0.10
300-399	1	380	0.51	-									8	339	0.47 0.25
400-499	5	467	0.65	0.18	1	480	0.79	-	13	457	0.64	0.09	6	435	0.67 0.21
500-599	30	544	0.84	0.20	3	562	1.04	0.04	7	531	0.72	0.18	1	580	0.81 -
600-699	12	637	1.02	0.27	2	665	1.19	0.01	4	616	1.42	0.62	1	630	0.94 -
700-799	4	720	1.24	1.02	1	740	0.90	-	1	720	1.15	-	2	617	1.50 0.34
800-899	1	825	1.01	-						3	733	1.66	0.41		

Mystery Lake northern pike.

Length interval	1979				1982				1983			
	n	$\overline{FL}$	$\overline{Hg}$	s	n	$\overline{FL}$	$\overline{Hg}$	s	n	$\overline{FL}$	$\overline{Hg}$	s
100-199												
200-299	2	265	0.49	-					1	284	1.42	-
300-399									1	380	0.90	
400-499	6	480	0.64	0.09					9	456	0.77	0.21
500-599	9	536	0.88	0.19	6	574	0.77	0.23	16	550	0.91	0.25
600-699	6	632	1.06	0.37	7	651	1.07	0.45	12	648	1.14	0.41
700-799	3	722	1.10	0.04	10	731	1.45	0.24	7	739	1.39	0.44
800-899					3	847	1.12	0.72	4	811	1.48	0.53
900-999					3	938	1.02	0.74				
1000-1099					1	1019	1.39	-				

Length Interval	Whitefish			Walleye		
	1984			1983		
	n	$\bar{F}\bar{I}$	$\bar{H}\bar{g}$	n	$\bar{F}\bar{I}$	$\bar{H}\bar{g}$
100-149						
150-199						
200-249	1	226	0.23	-	-	-
250-299	1	262	0.21	-	-	-
300-349	11	329	0.27	0.08		
350-399	10	378	0.30	0.11		
400-449	8	418	0.34	0.06		
450-499	2	466	0.71	0.12	2	475
500-549					2	475
550-599					4	519
600-649					2	466

Apussigamasí Lake northern pike.

Length interval	1982				1983				1984			
	n	$\bar{F}$	$\bar{H}_g$	s	n	$\bar{F}$	$\bar{H}_g$	s	n	$\bar{F}$	$\bar{H}_g$	s
100-199												
200-299									8	269	0.43	0.07
300-399									8	351	0.65	0.25
400-499									12	456	0.90	0.26
500-599									17	558	1.49	0.53
600-699	1	685	1.15	-	1	685	1.57	-	6	632	1.50	0.50
700-799	3	743	0.77	0.49	3	723	1.25	0.21	1	780	2.70	-
800-899	6	837	1.37	0.75	1	815	1.69	-	1	850	2.81	-
900-999									1	909	1.93	-

Sipiwesk Lake whitefish.

Length interval	1977			1983		
	n	$\overline{PL}$	$\overline{Hg}$	n	$\overline{PL}$	$\overline{Hg}$
100-149						
150-199						
200-249				1	242	0.04
250-299						
300-349				4	311	0.03
350-399				1	350	0.03
400-449				5	427	0.07
450-499	2	473	0.13	4	463	0.06
500-549				1	512	0.08
550-599						

Sipitweak Lake pike.

Length Interval	1972			1973			1974			1976			1977			1978								
	n	PI	H _g	n	PI	H _g	n	PI	H _g	n	PI	H _g	n	PI	H _g	n	PI	H _g						
100-199																								
200-299																								
300-399	1	394	0.45																					
400-499	5	466	0.43	0.15	5	480	0.49	0.10	1	497	0.52	-	29	461	0.44	0.11	1	490	0.67	-	2	415	0.89	0.17
500-599	92	534	0.65	0.17	60	555	0.62	0.17	5	559	0.65	0.29	85	546	0.58	0.17	8	555	0.58	0.07	1	595	0.47	-
600-699	27	632	0.74	0.18	53	653	0.70	0.17	8	645	0.67	0.17	26	636	0.67	0.27	11	653	0.86	0.37	5	653	0.76	0.23
700-799	8	743	0.81	0.14	21	737	0.75	0.14	5	765	0.90	0.39	4	746	1.11	0.15	10	752	0.93	0.25				
800-899	1	800	1.09	-	2	857	1.03	0.37					7	836	1.55	0.40	4	829	1.28	0.27				
900-999													2	920	1.40	0.21	5	937	1.41	0.33				
1000-1099																	2	1020	1.23	0.30				

Sipitweak Lake pike.

Length Interval	1979			1980			1981			1982			1983			
	n	PI	H _g	n	PI	H _g	n	PI	H _g	n	PI	H _g	n	PI	H _g	
100-199													1	186	0.07	-
200-299													1	282	0.10	-
300-399													3	383	0.20	0.03
400-499													9	436	0.26	0.09
500-599	6	556	0.54	0.13	19	575	0.71	0.18	71	566	0.63	0.21	64	564	0.70	0.20
600-699	13	647	0.84	0.17	38	651	0.83	0.17	125	642	0.81	0.30	69	649	0.80	0.38
700-799	4	739	0.93	0.50	30	742	1.03	0.23	65	741	1.12	0.44	34	750	1.24	0.55
800-899	4	856	1.32	0.21	8	824	1.19	0.27	10	851	1.47	0.52	36	845	1.45	0.64
900-999	2	942	1.46	0.23	2	940	2.71	1.20	1	904	1.95	-	12	919	1.72	0.45
1000-1099	1	1026	2.18	-					1	1046	2.13	-	1	1012	2.48	-

Assean Lake northern pike.

Length Interval	1981			1982			1985		
	n	Fl	Hg s	n	Fl	Hg s	n	Fl	Hg s
100-199									
200-299									
300-399									
400-499	7	462	0.18 0.04				2	475	0.17 0.07
500-599	12	547	0.23 0.10	1	553	0.29 -	10	547	0.21 0.09
600-699	8	651	0.33 0.09				5	617	0.26 0.06
700-799	4	740	0.43 0.06	2	756	0.49 0.27			
800-899	1	855	0.38 -				1	878	0.54 -
900-999	2	970	0.79 0.16	1	945	0.34 -			
1000-1099				1	1012	0.92			

Split Lake walleye.

Length Interval	1972		1973		1974		1976		1978		1979	
	n	FI	n	FI	n	FI	n	FI	n	FI	n	FI
100-149												
150-199												
200-249												
250-299							1	270				
300-349	1	305										
350-399	7	383	2	375	1	394	5	386	6	386		
400-449	18	419	2	432	12	433	5	438	34	424	5	412
450-499	4	479	3	467	4	463	26	464	22	478		
500-545					2	541	12	510	2	523	1	510
550-599							3	573	2	570		
600-649												

Split Lake walleye. Cont'd.

Length Interval	1980		1981		1982		1983		1984	
	n	FI	n	FI	n	FI	n	FI	n	FI
100-149									1	136
150-199									1	160
200-249									4	213
250-299									12	267
300-349					4	330	8	337	6	338
350-399					2	375	32	372	20	379
400-449	5	420	3	438	6	428	17	417	20	415
450-499	1	499	2	496	1	452			4	463
500-549	8	519	2	520						
550-599			3	578						
600-649	1	635	1	607						

Split Lake northern pike.

Length Interval	1972			1973			1976			1978			1979			1981				
	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s		
100-199																				
200-299																				
300-399																				
400-499	9	678	0.38	0.11																
500-599	35	548	0.41	0.16	1	572	0.99	-	10	549	0.36	0.16				7	571	0.44	0.16	
600-699	13	643	0.42	0.14	8	651	0.55	0.20	31	664	0.56	0.18	1	675	0.46	-	5	633	0.56	0.24
700-799	6	745	0.47	0.11	10	751	0.50	0.16	36	762	0.62	0.20	3	738	0.35	0.14	1	765	0.70	-
800-899	1	838	0.33	-	11	836	0.54	0.11	22	835	0.69	0.19	1	857	0.94	-	3	813	0.75	0.18
900-999					2	908	1.06	0.37	2	905	0.56	-				1	910	1.08	-	
1000-1099					1	1003	0.86	-				-				1	1000	1.54	-	

Split Lake northern pike. Cont'd.

Length Interval	1982			1983			1984					
	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s	n	$\bar{P}\bar{L}$	s			
100-199												
200-299												
300-399	2	370	0.21	0.04	2	374	0.24	0.03	8	341	0.14	0.02
400-499	4	458	0.41	0.05	15	448	0.24	0.09	15	452	0.22	0.10
500-599	4	549	0.61	0.14	18	567	0.52	0.19	14	528	0.31	0.11
600-699	3	654	0.57	0.22	11	646	0.54	0.12	7	641	0.47	0.18
700-799	2	726	0.81	0.04	4	745	0.71	0.31	7	723	0.48	0.13
800-899	2	845	1.16	0.08					1	812	0.86	-
900-999	2	940	0.87	0.27					1	980	0.86	-
1000-1099												

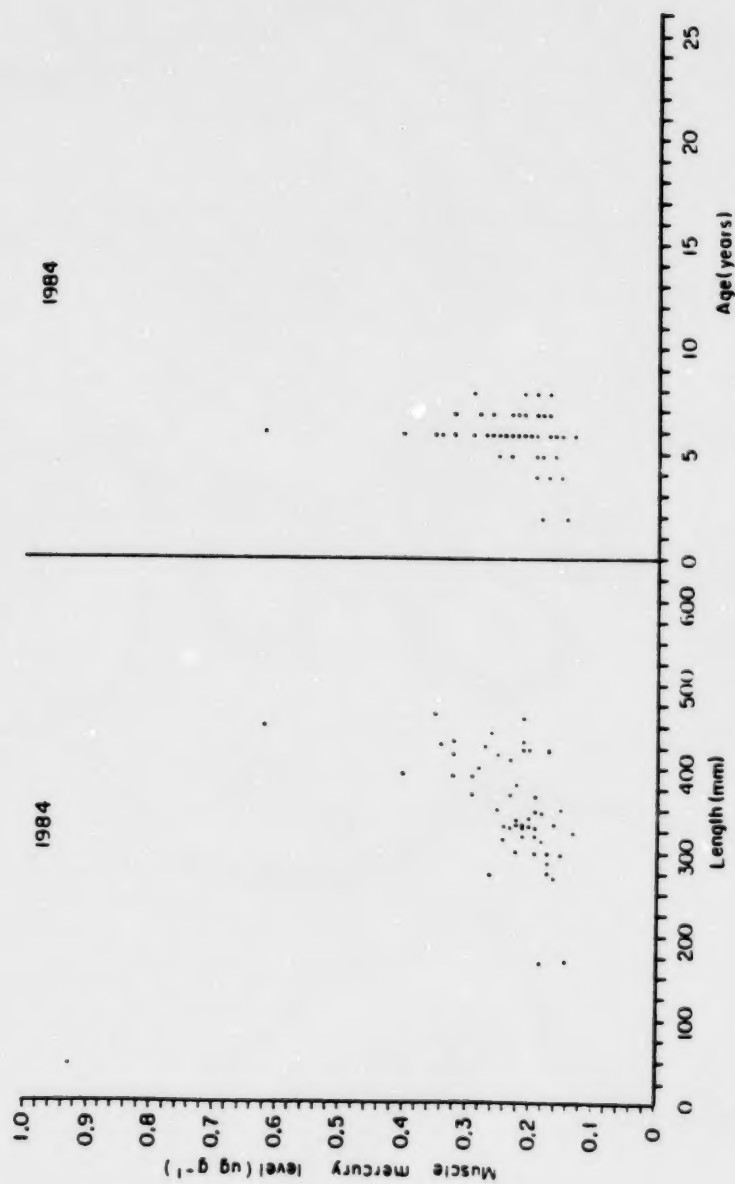
Stephens Lake.

Length Interval	Whitefish						Walleye					
	1983			1984			1983			1984		
	n	$\bar{F}$	$\bar{H}_g$	s	n	$\bar{F}$	$\bar{H}_g$	s	n	$\bar{F}$	$\bar{H}_g$	s
100-149									1	146	0.19	-
150-199	2	192	0.08	0.01	2	177	0.09	0.01	9	164	0.19	0.04
200-249	1	240	0.12	-	12	217	0.10	0.02	8	228	0.35	0.05
250-299	2	283	0.11	0.03					-4	272	0.34	0.13
300-349					3	334	0.13	0.03	1	328	1.34	-
350-399	3	379	0.13	0.01	6	384	0.18	0.03	2	373	1.02	0.07
400-449	2	434	0.23	0.11	6	425	0.23	0.05				
450-499	10	477	0.35	0.06	8	470	0.35	0.11	1	463	1.30	-
500-549					3	505	0.46	0.04	4	519	2.31	0.20
550-599									1	578	2.14	-

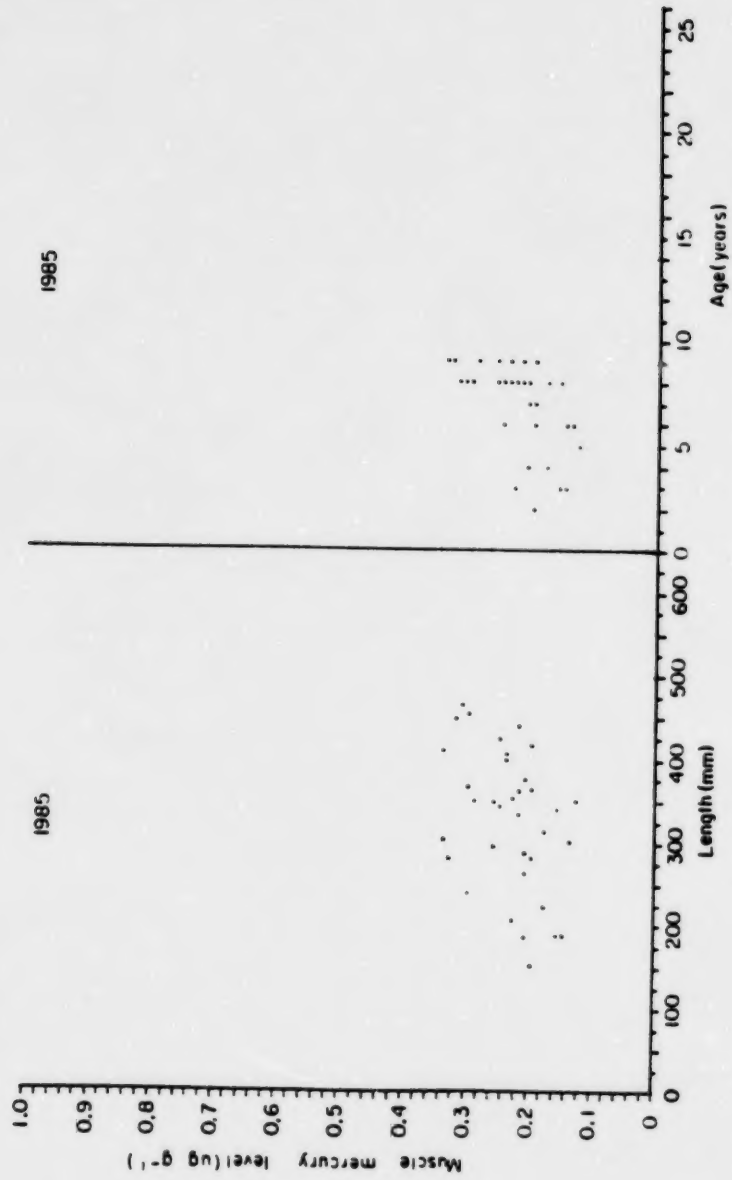
Stephens Lake pike.

Length interval	1983			1984		
	n	$\overline{P\bar{I}}$	$\overline{Hg}$ s	n	$\overline{P\bar{I}}$	$\overline{Hg}$ s
100-199						
200-299						
300-399	3	363	0.44 0.07	2	333	0.31 0.01
400-499	3	407	0.46 0.05	5	441	0.63 0.26
500-599	18	565	1.28 0.40	6	584	0.96 0.31
600-699	10	635	1.43 0.62	8	651	1.26 0.20
700-799	5	725	1.71 0.29	14	748	1.77 0.50
800-899	6	833	2.47 0.70	8	842	2.14 0.57
900-999				1	914	3.30
1000-1099						

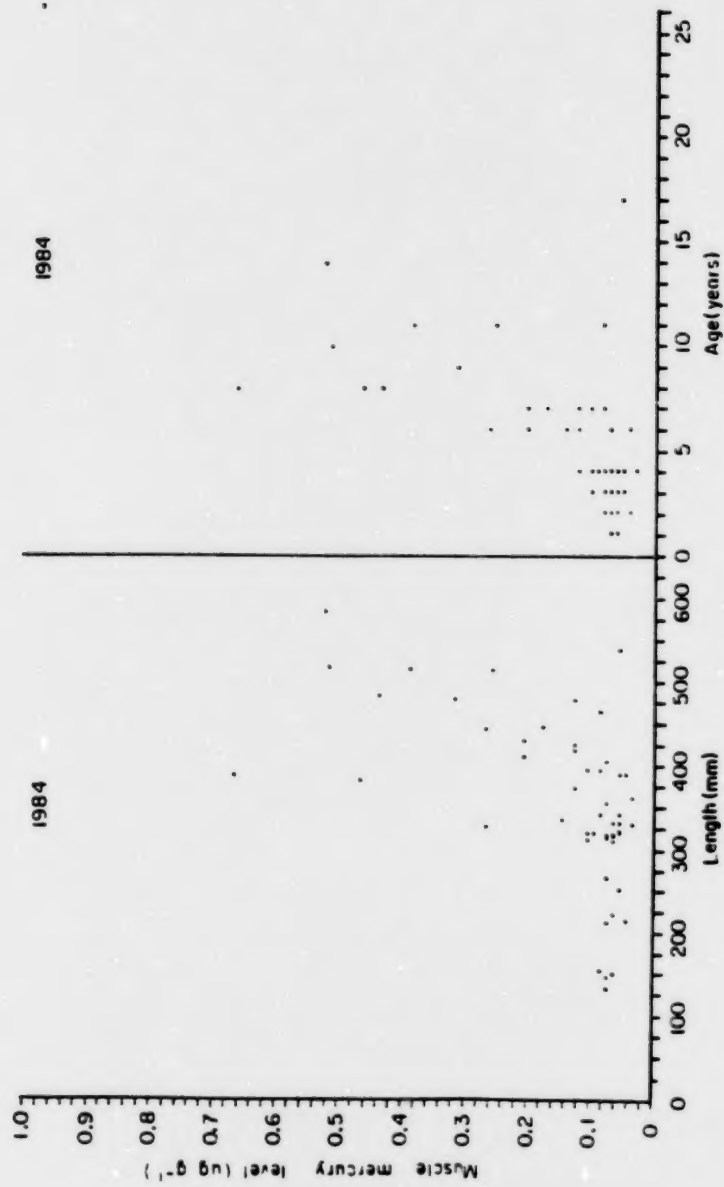
Appendix 6. Scatter plots of muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) in relation to length and age of whitefish, walleye and northern pike data collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985.



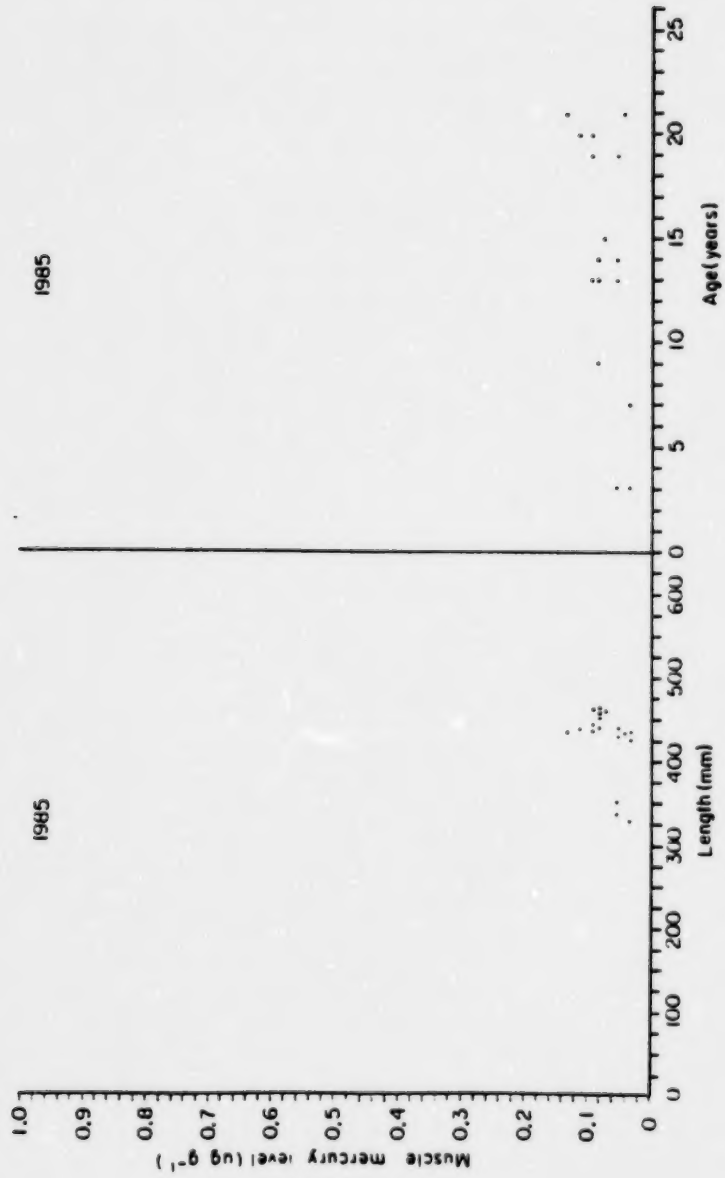
Karsakuwigamak Lake whitefish.



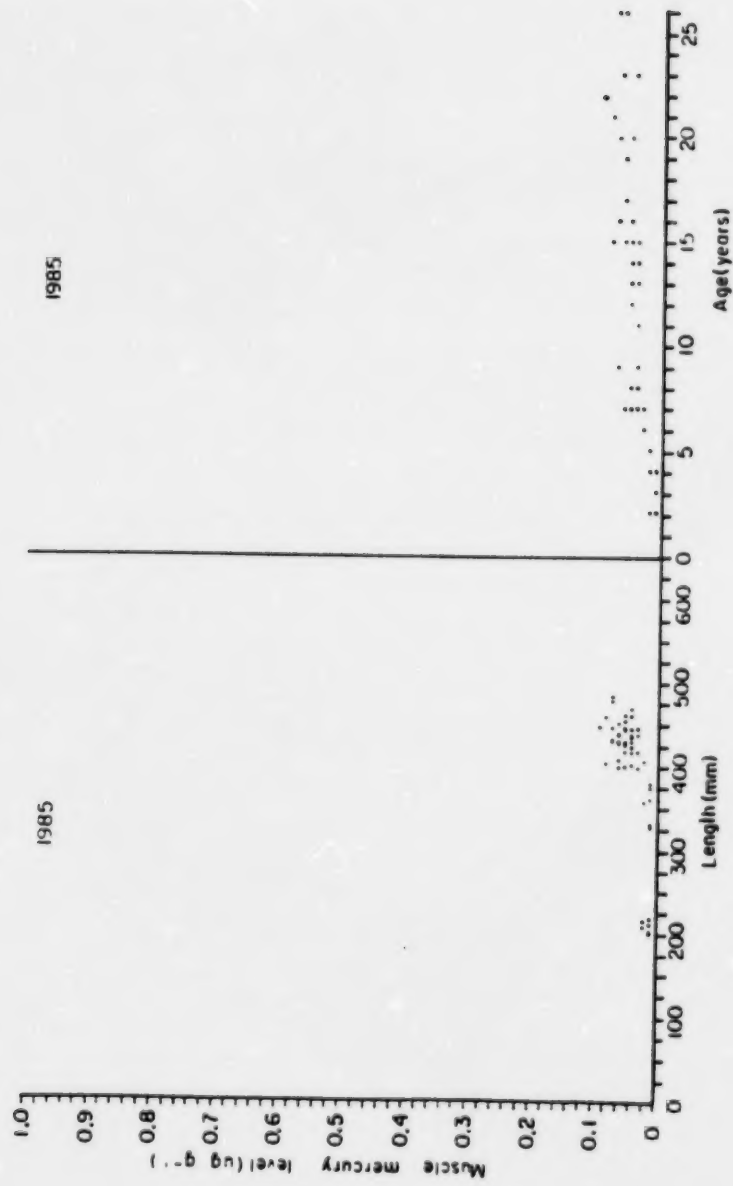
Pemichigamau Lake whitefish.



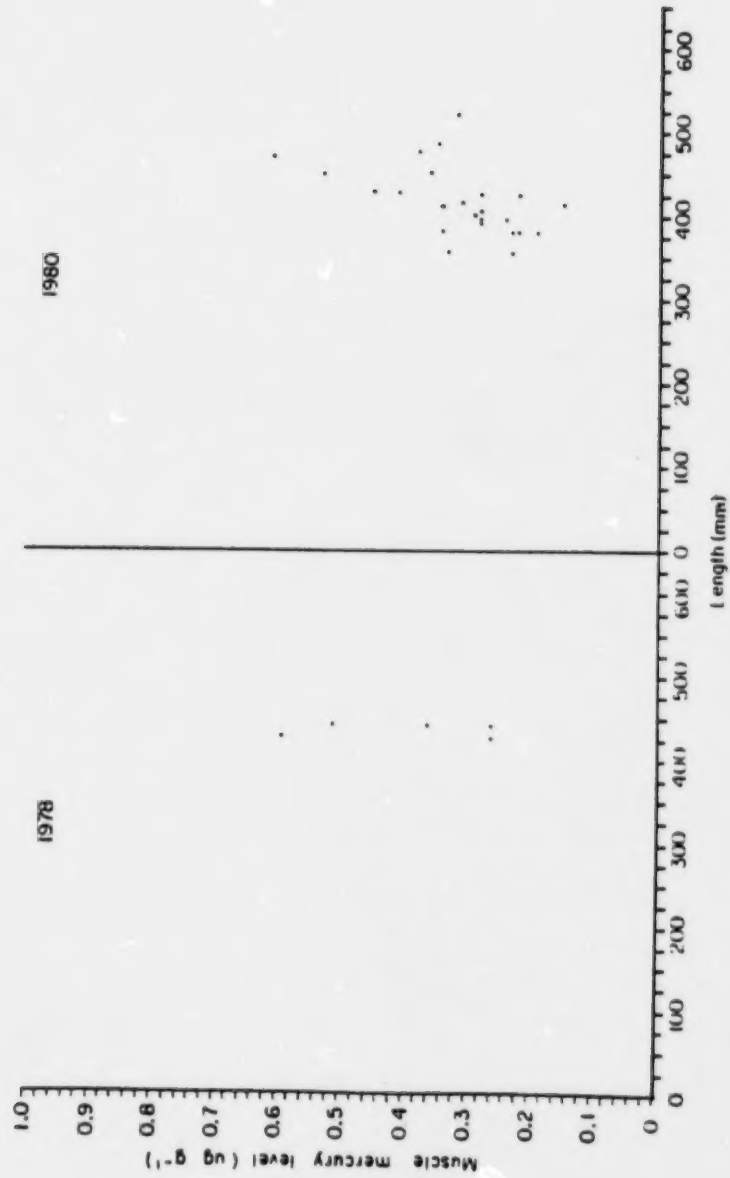
West & Central Mynarski Lake whitefish.



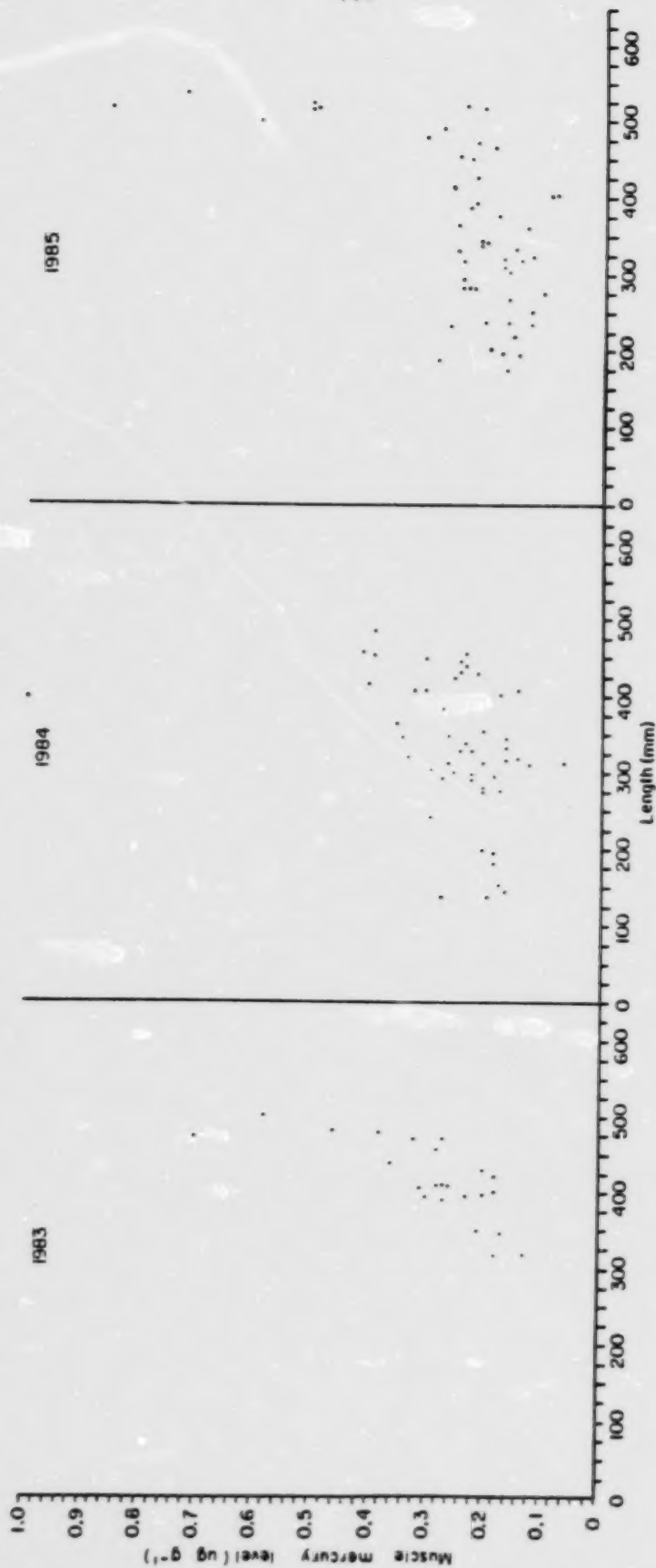
Costello Lake whitefish.



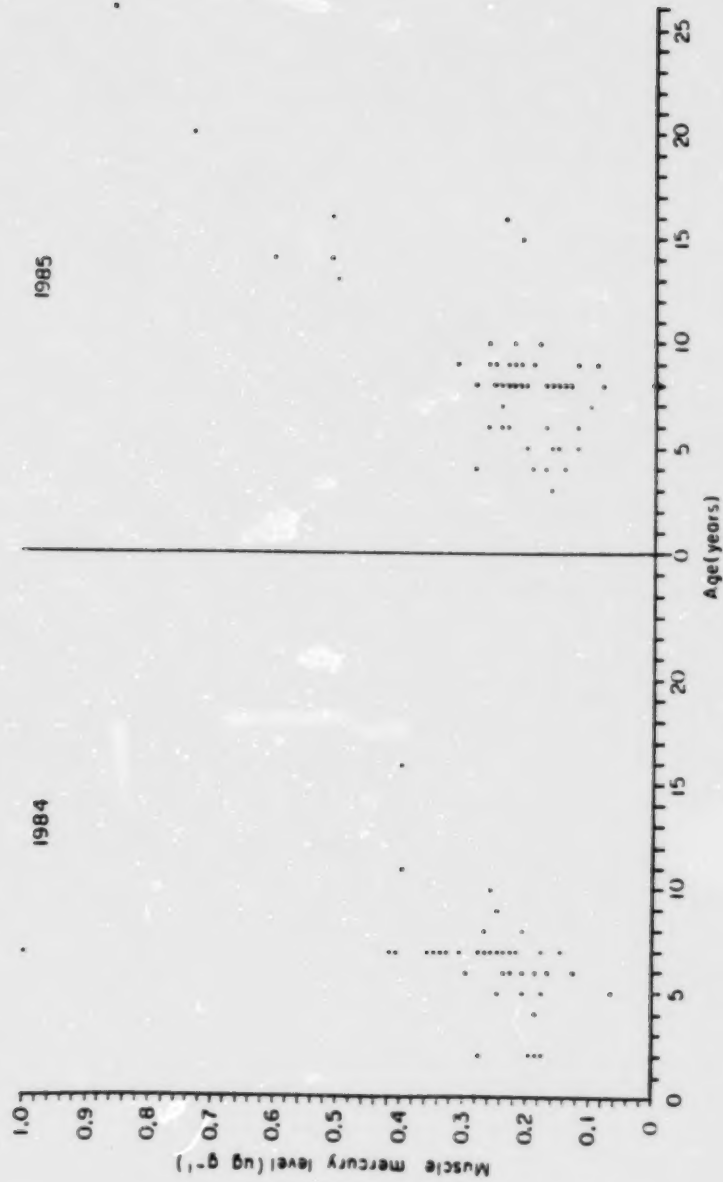
Suwannee Lake whitefish.



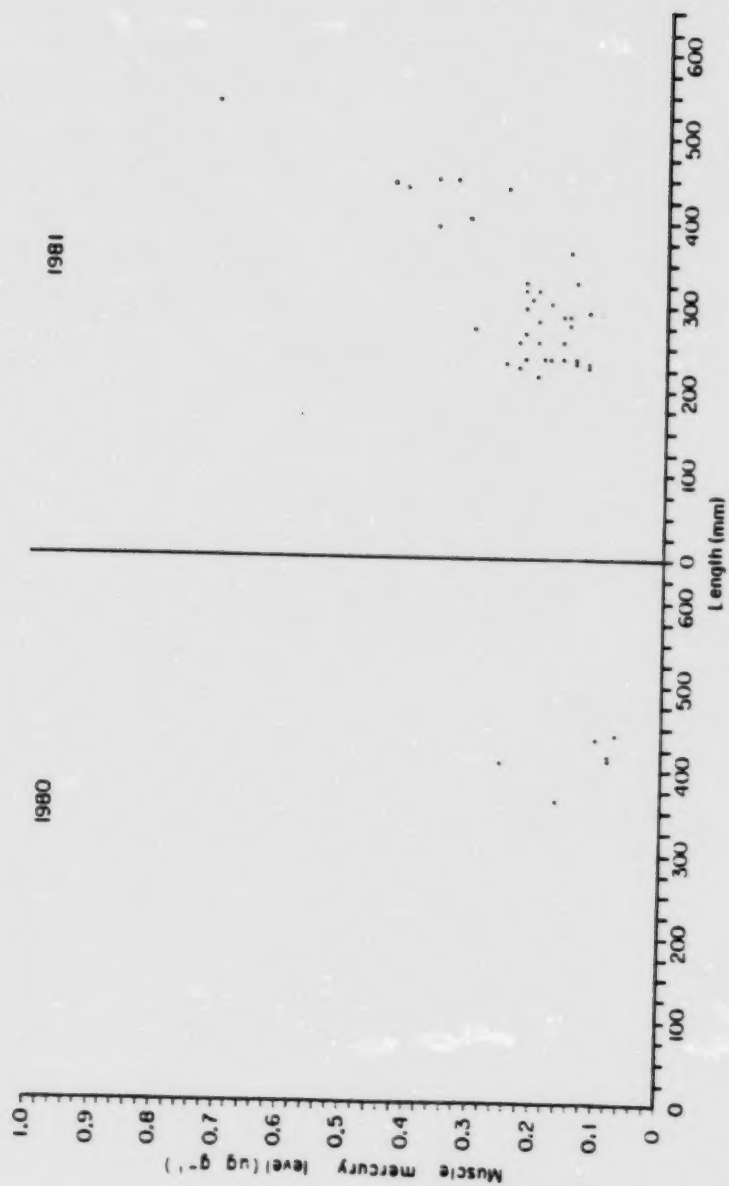
Rat Lake whitefish.



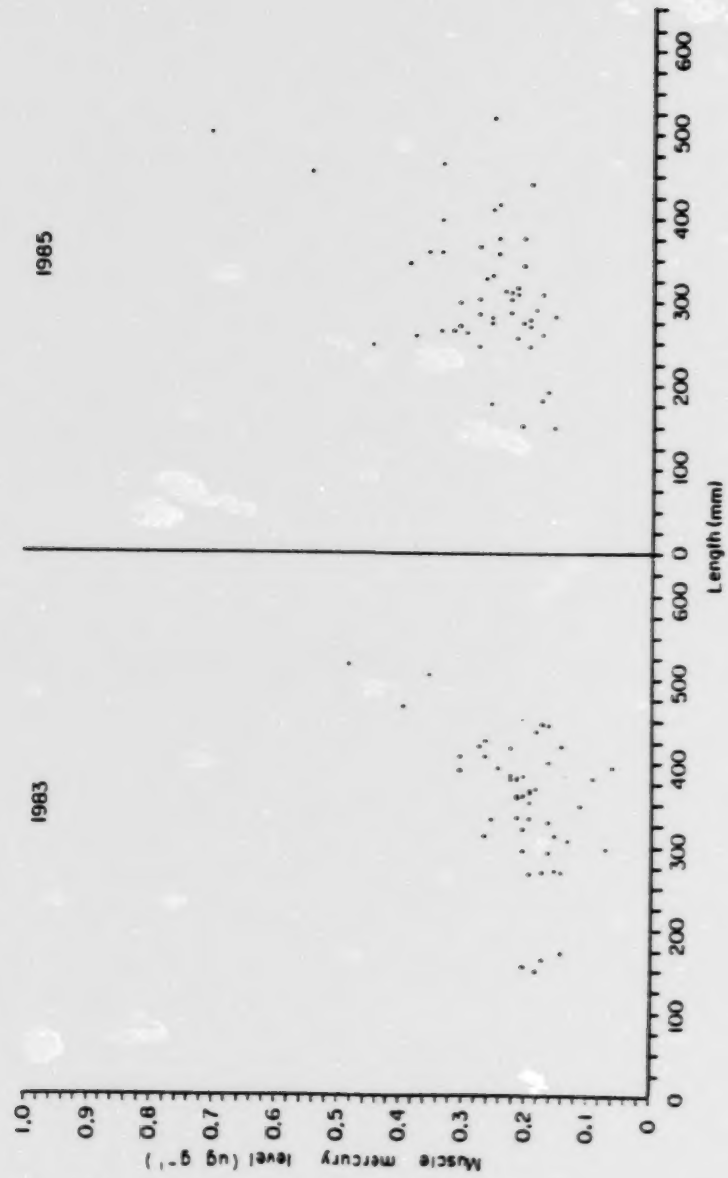
Rat Lake whitefish.



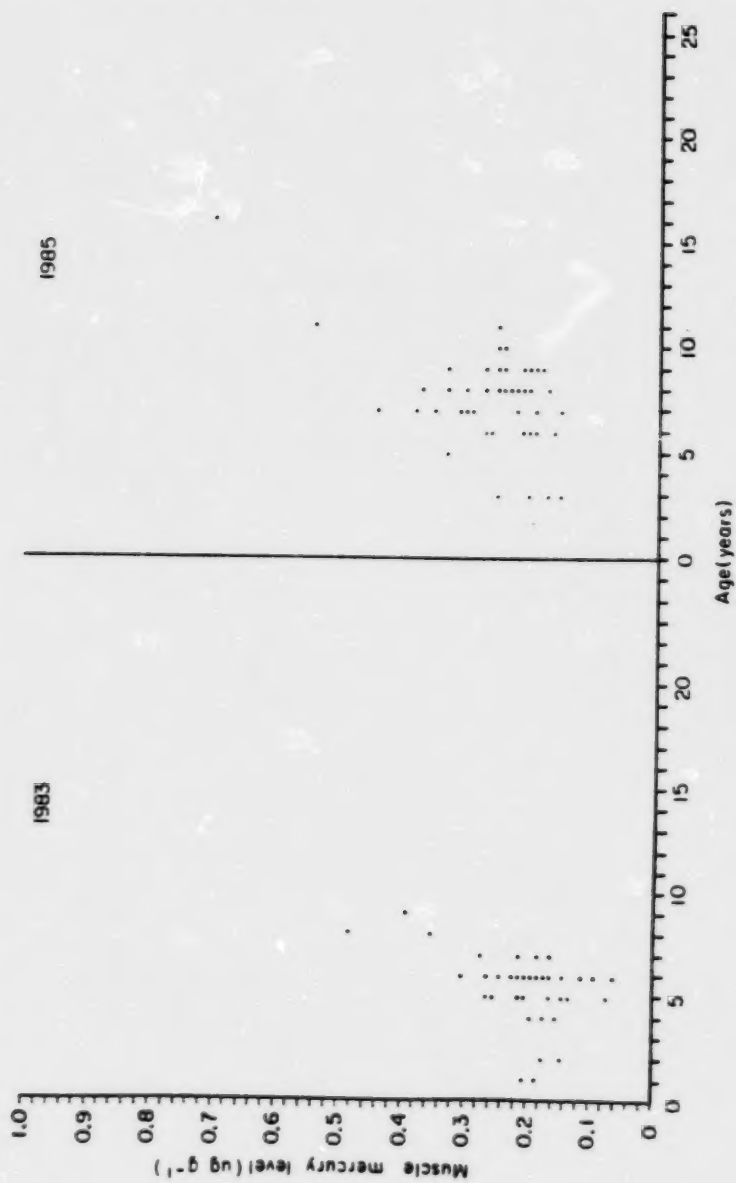
Rat Lake whitefish.



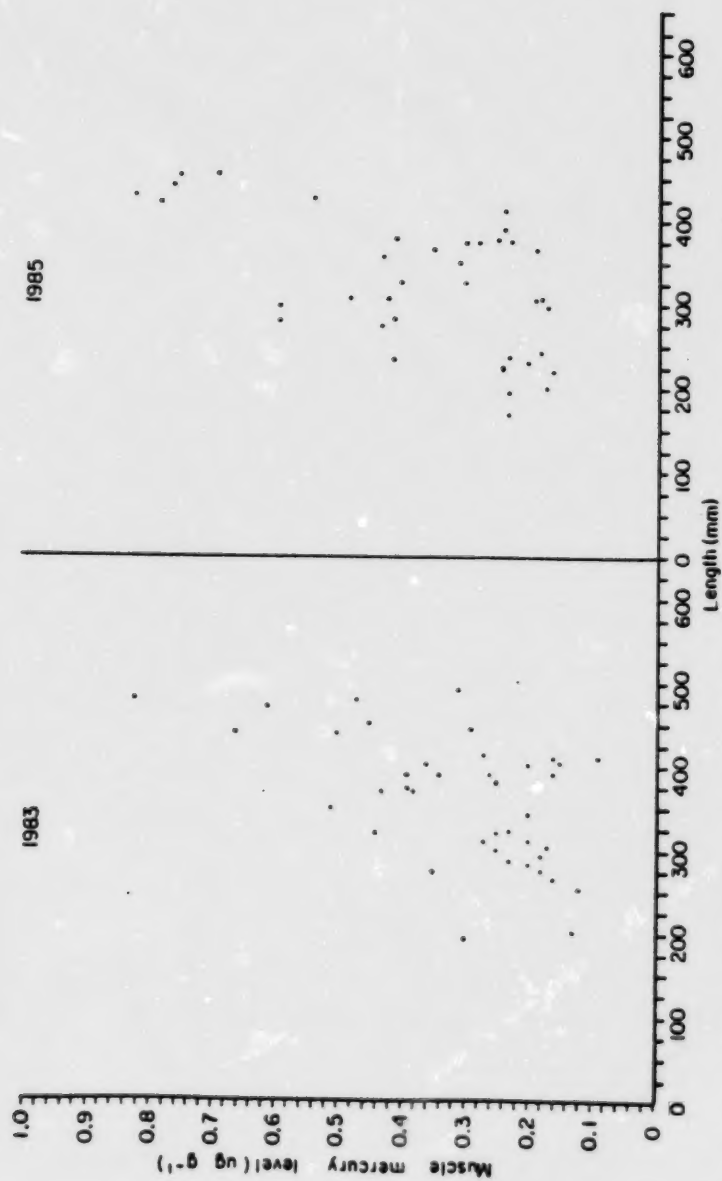
Notigi Lake whitefish.



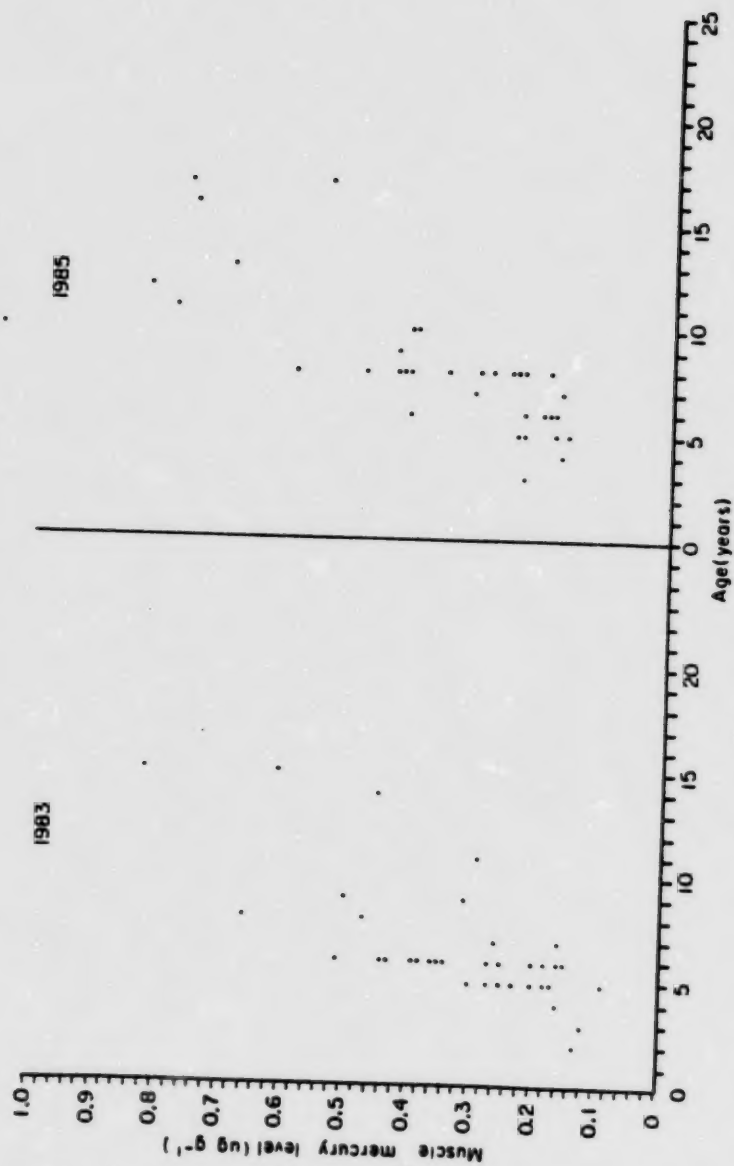
Notigi Lake whitefish.



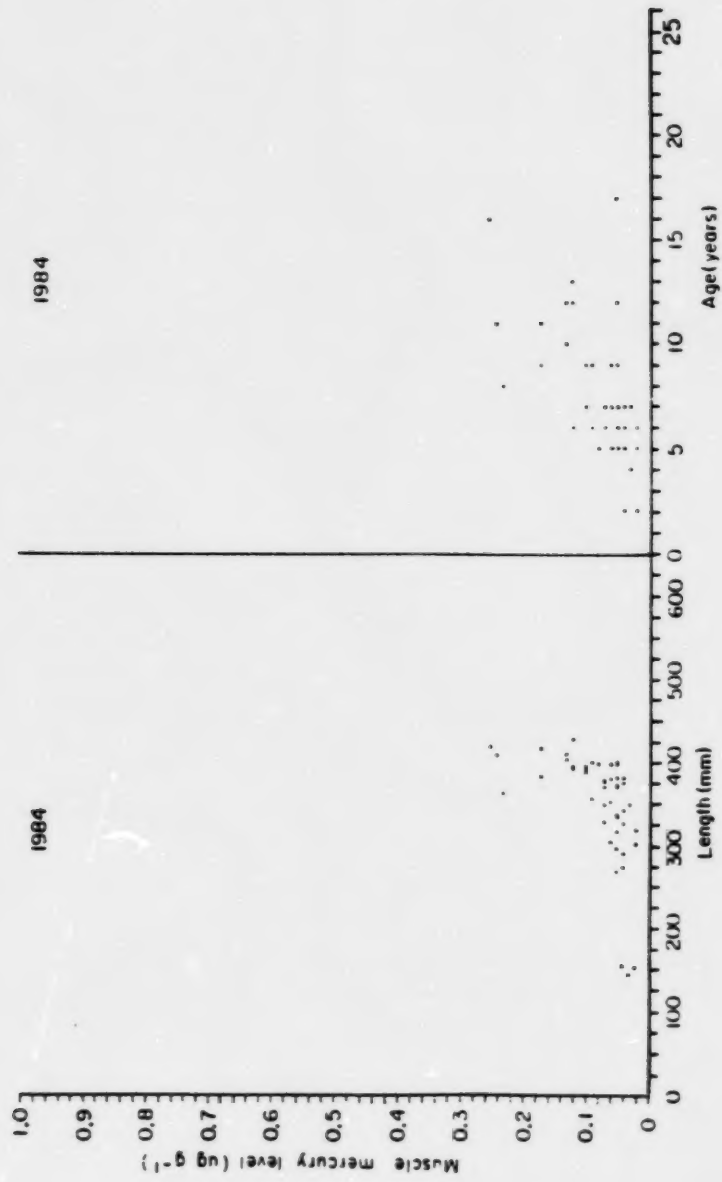
Notigi Lake whitefish.



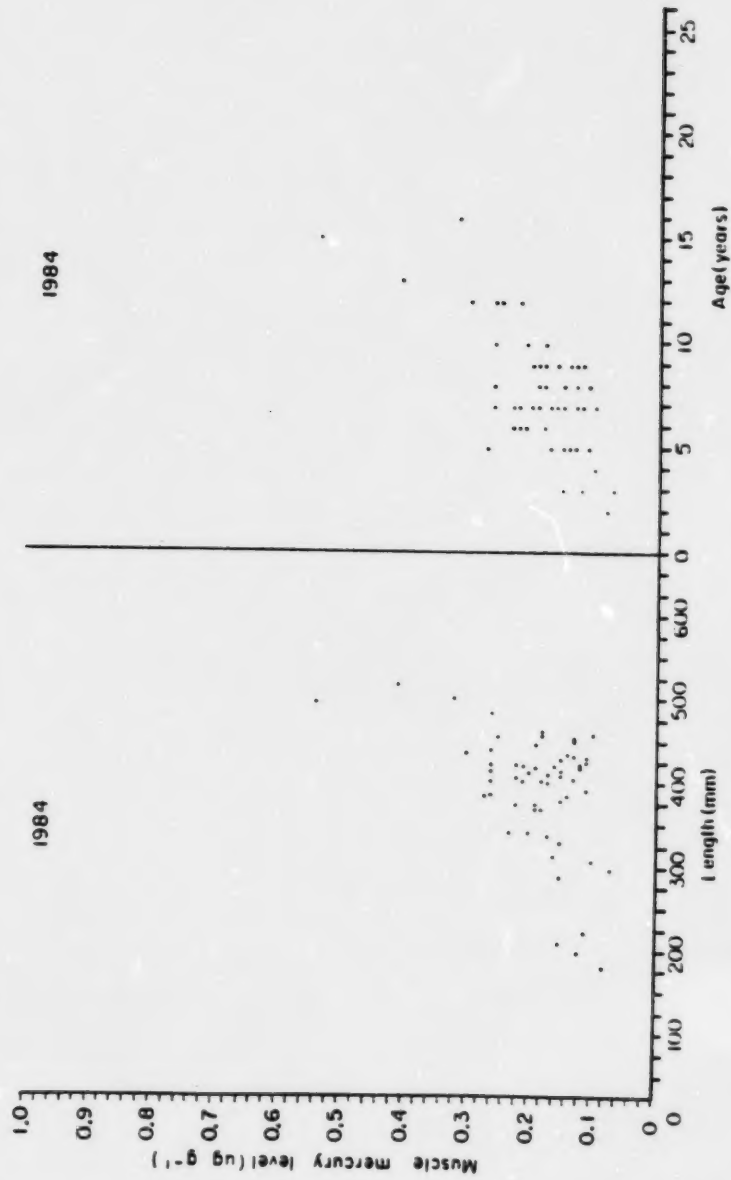
Wapitu Lake whitefish.



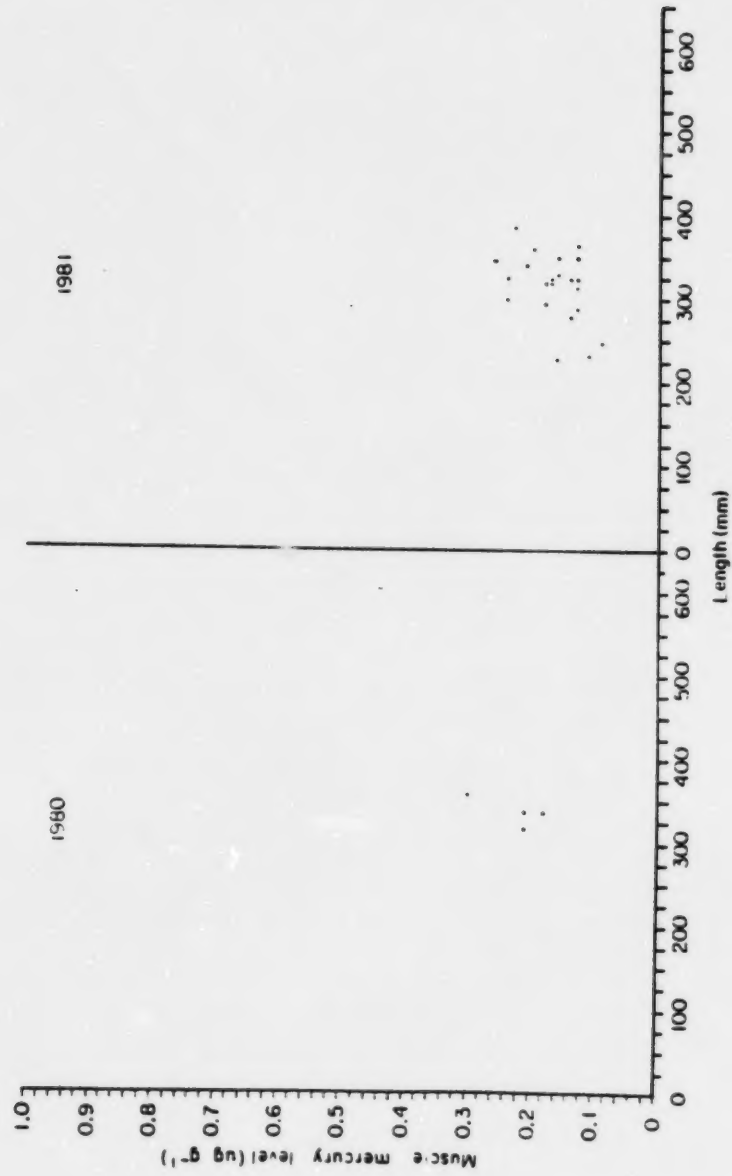
Wapisi Lake whitefish.



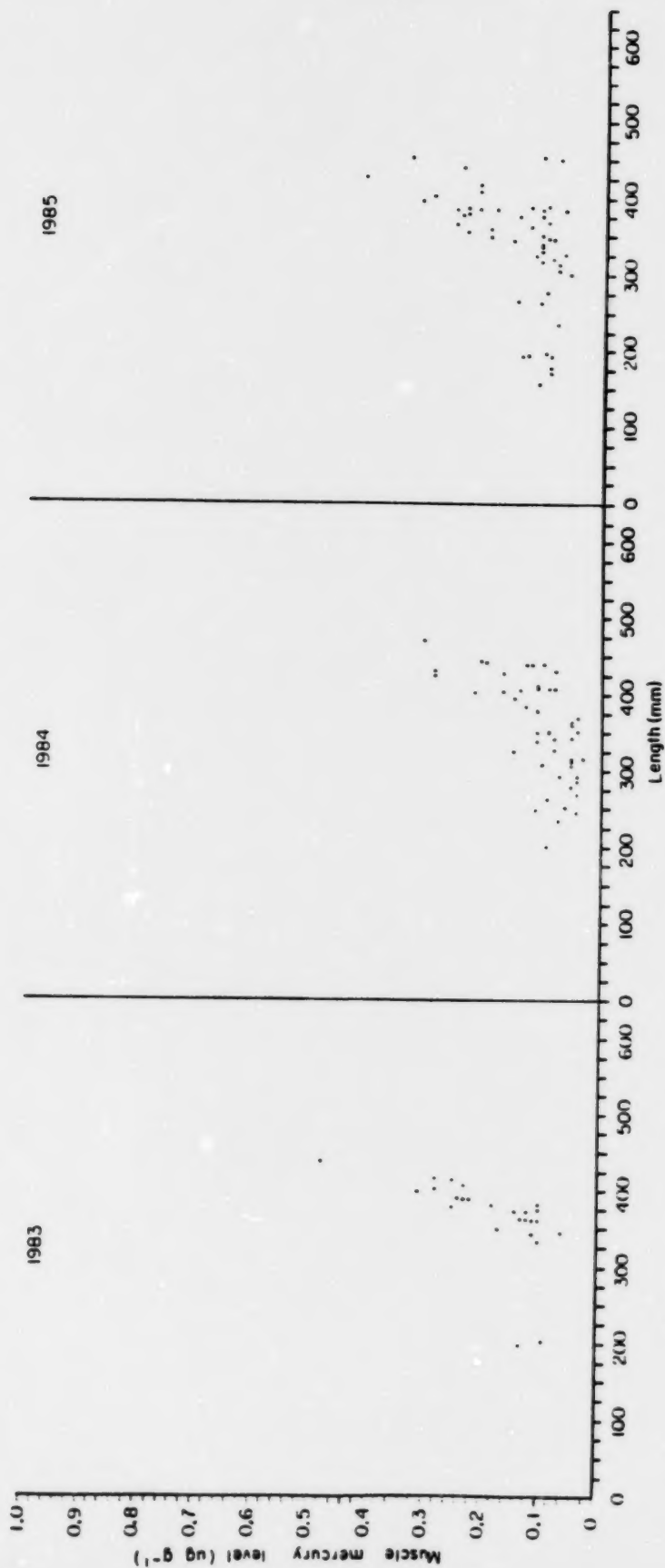
Macheewin Lake whitefish.



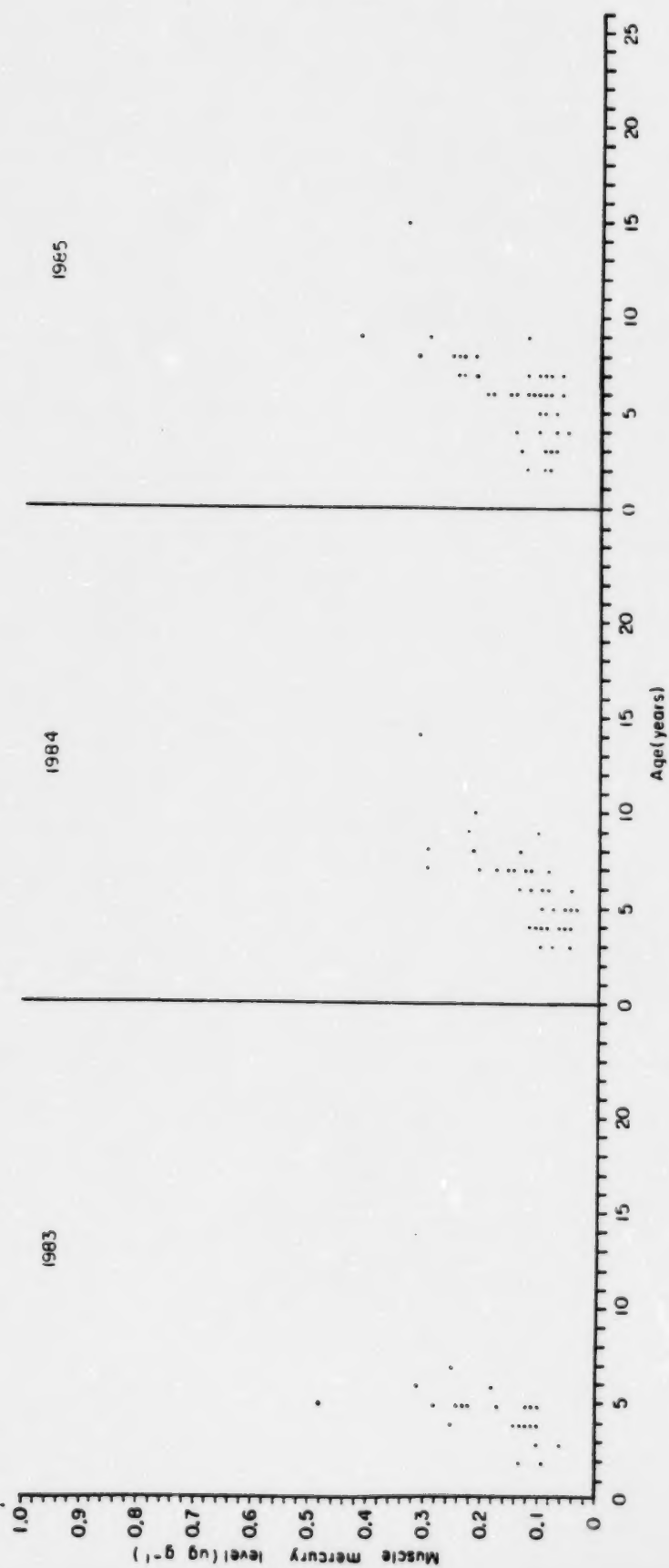
Osik Lake whitefish.



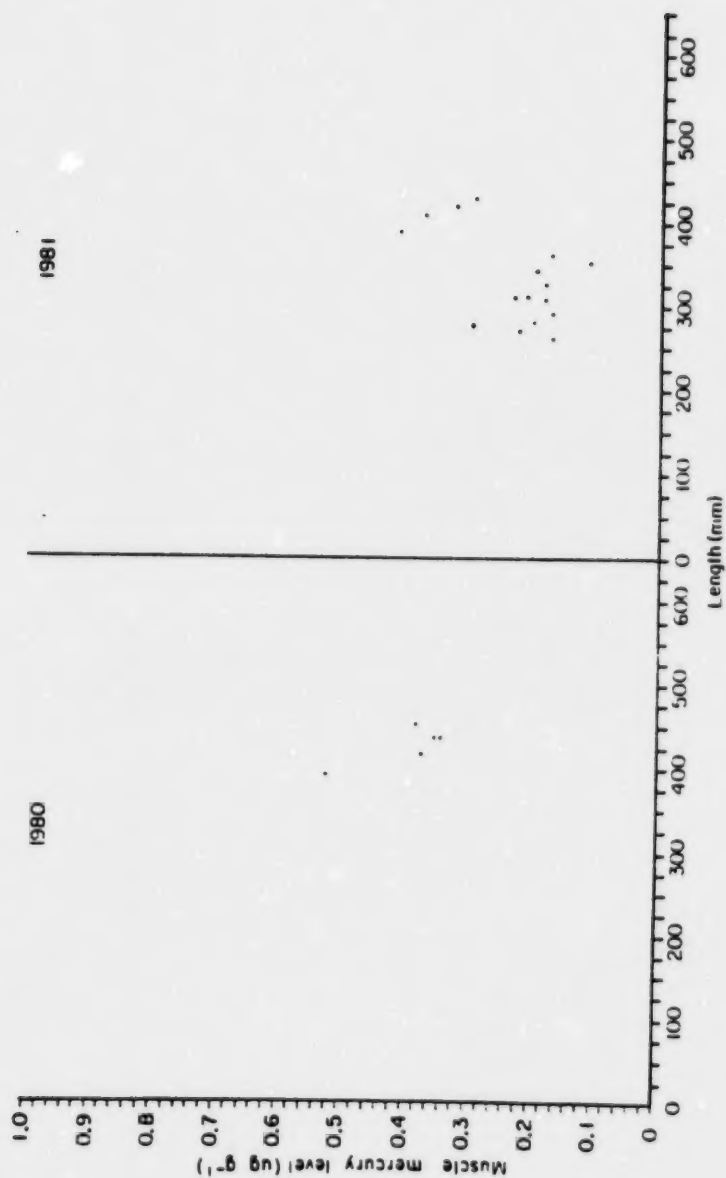
Footprint Lake whitefish.



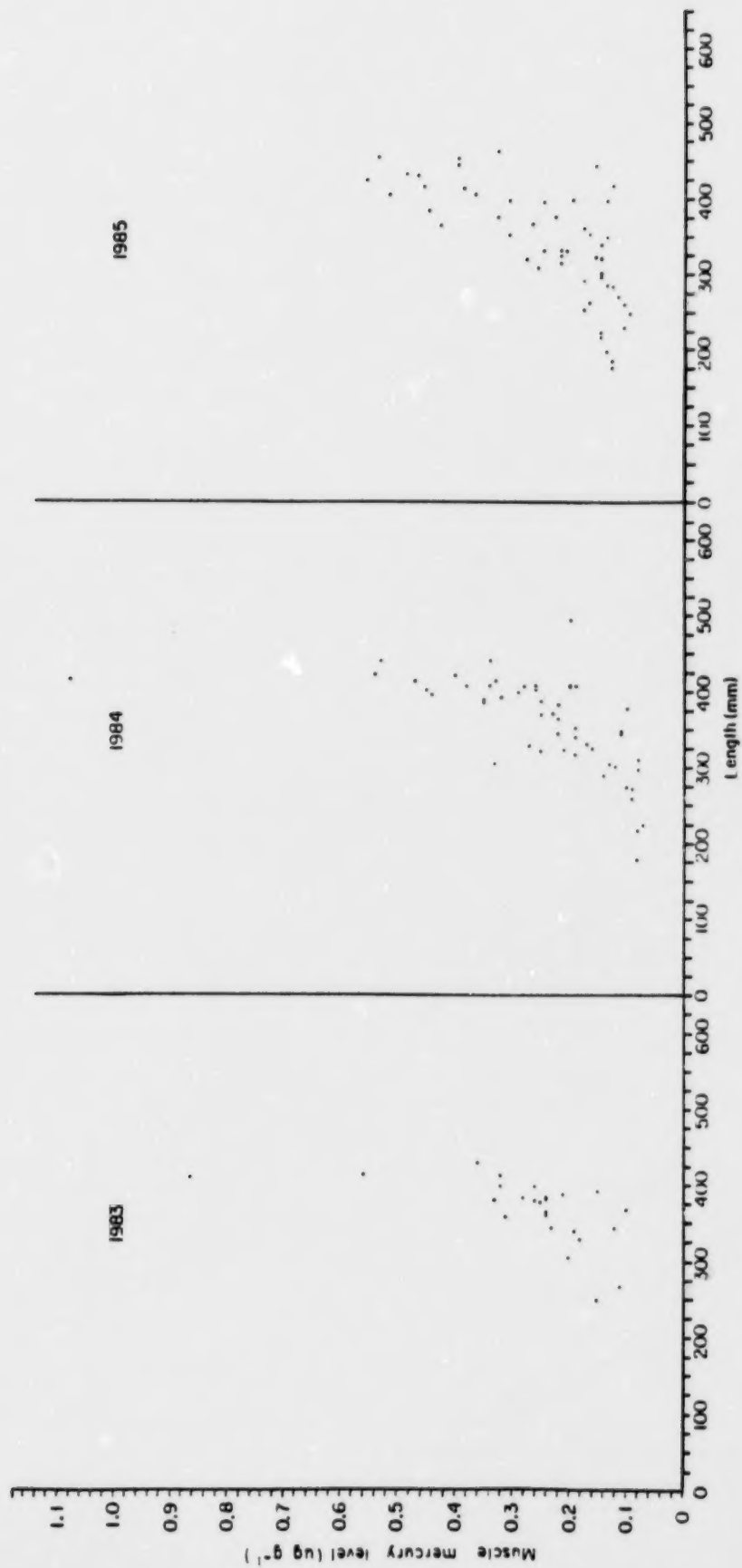
Footprint Lake whitefish.



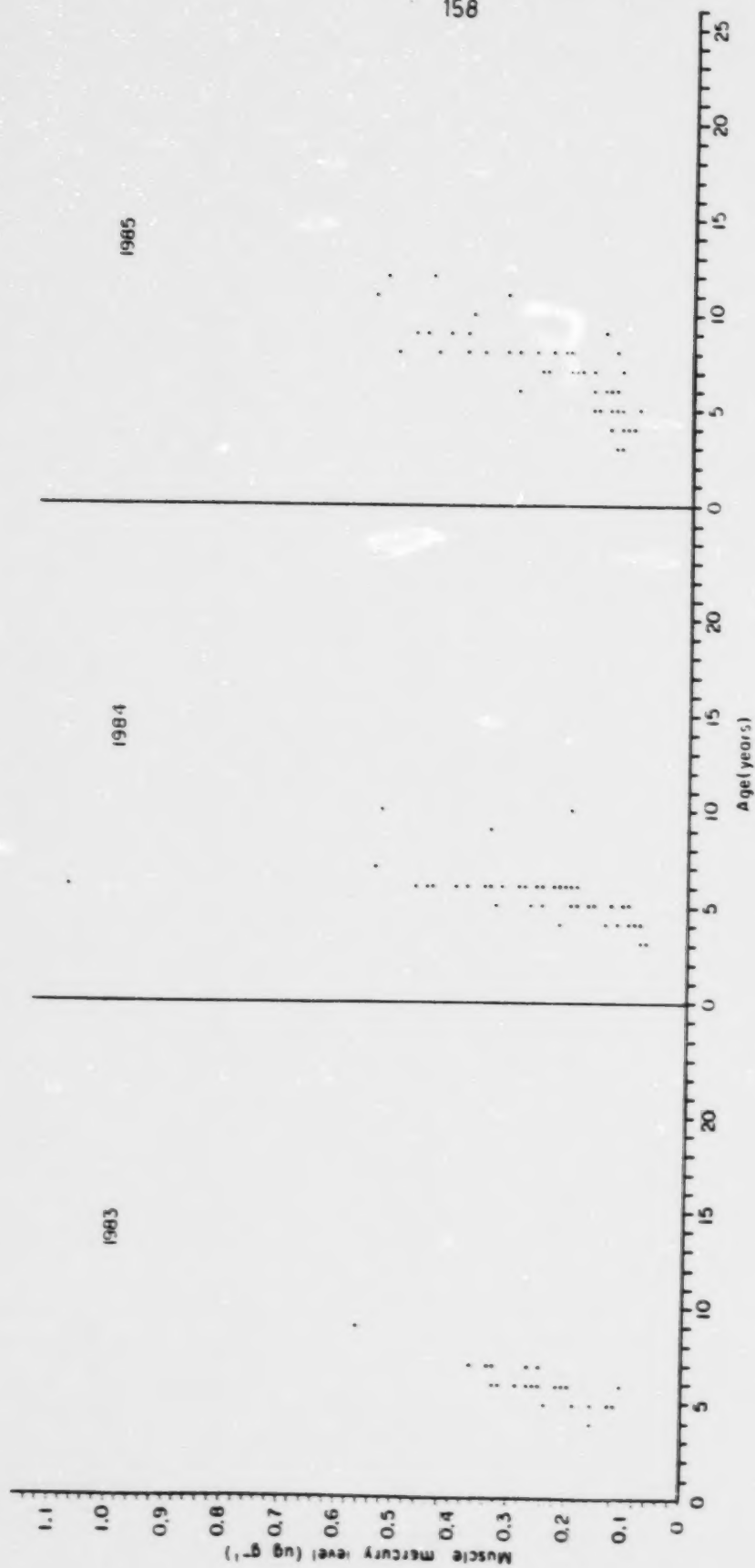
Footprint Lake whitefish.



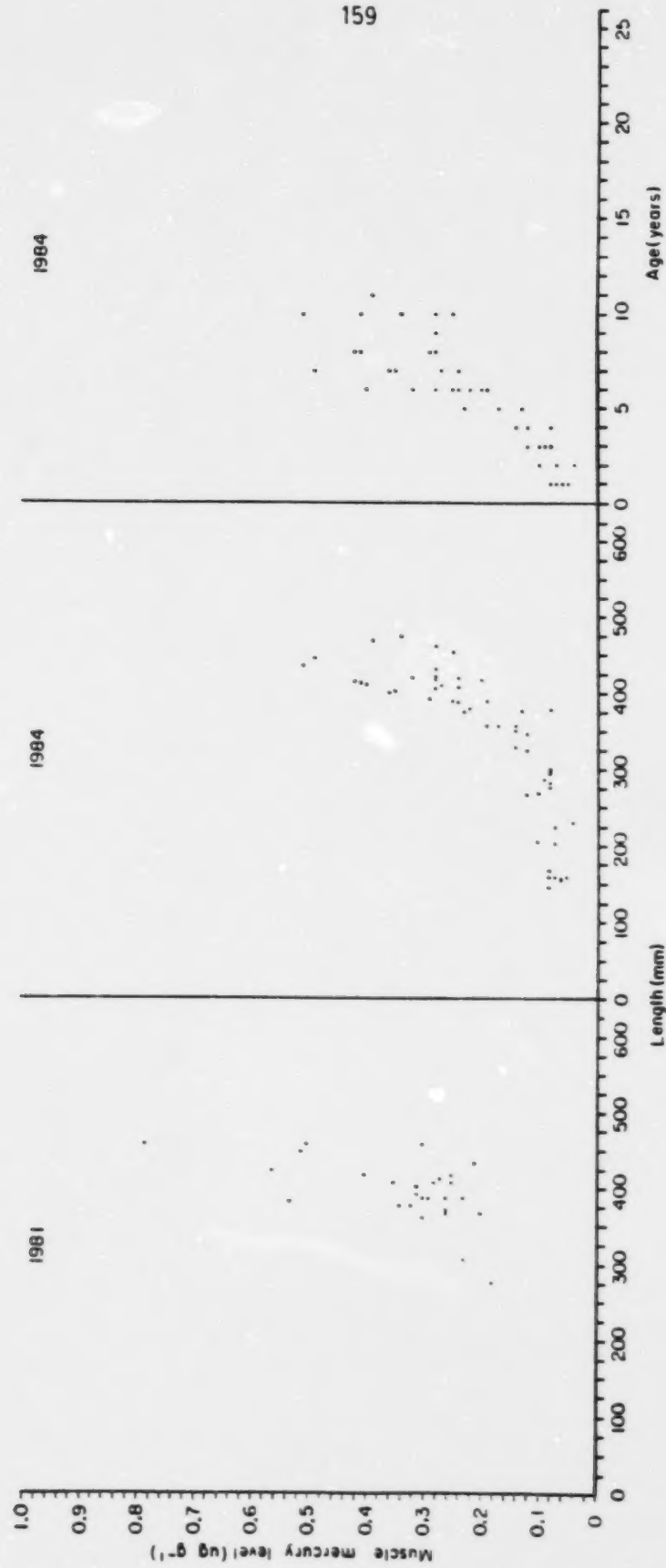
Threepoint Lake whitefish.



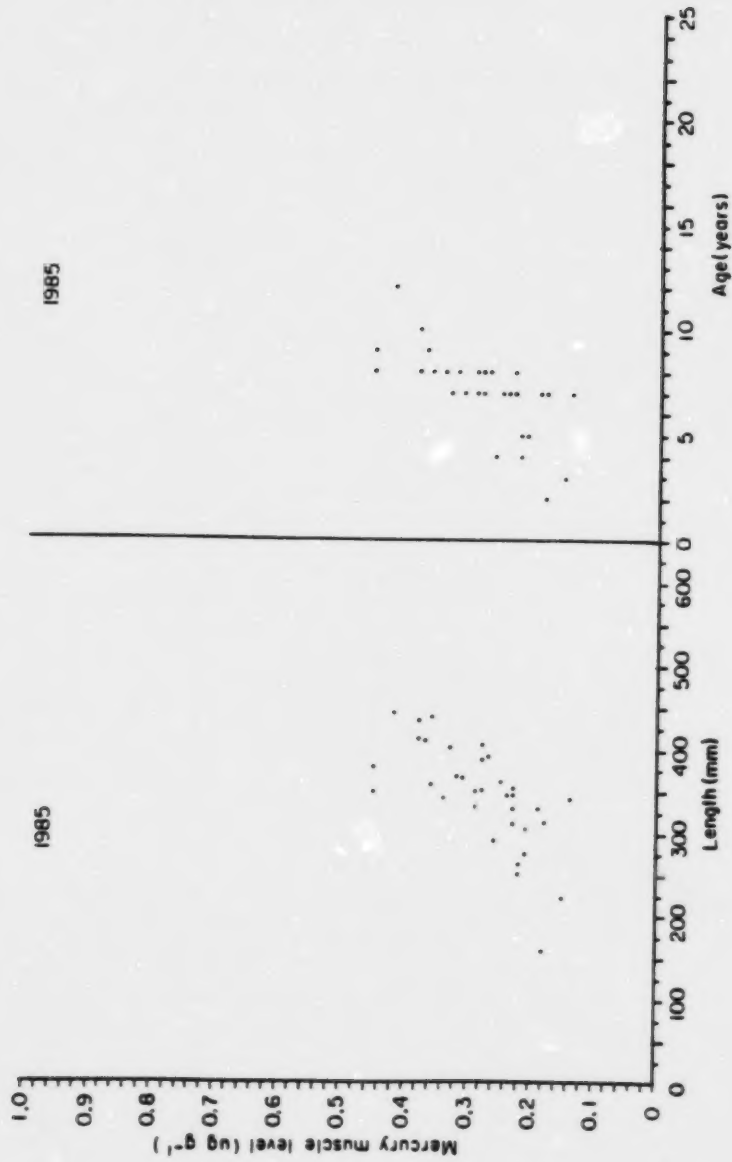
Threepoint Lake whitefish.



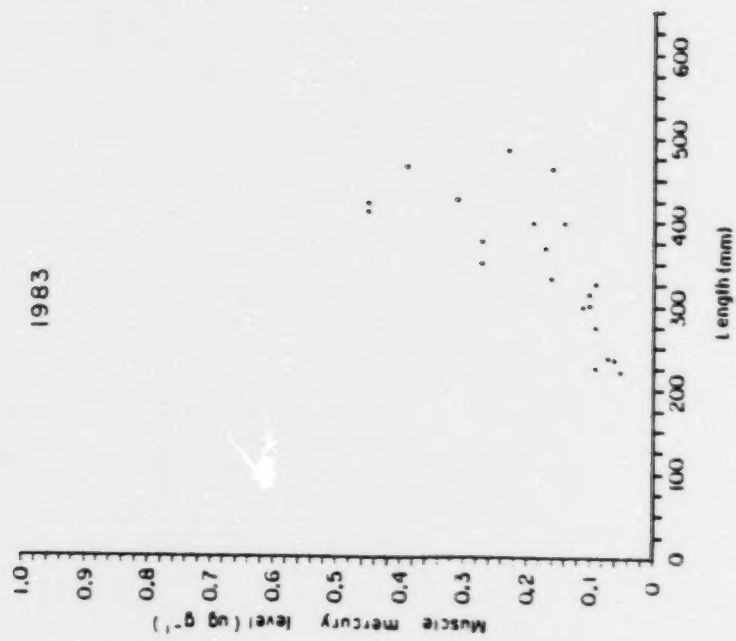
Threepoint Lake whitefish.



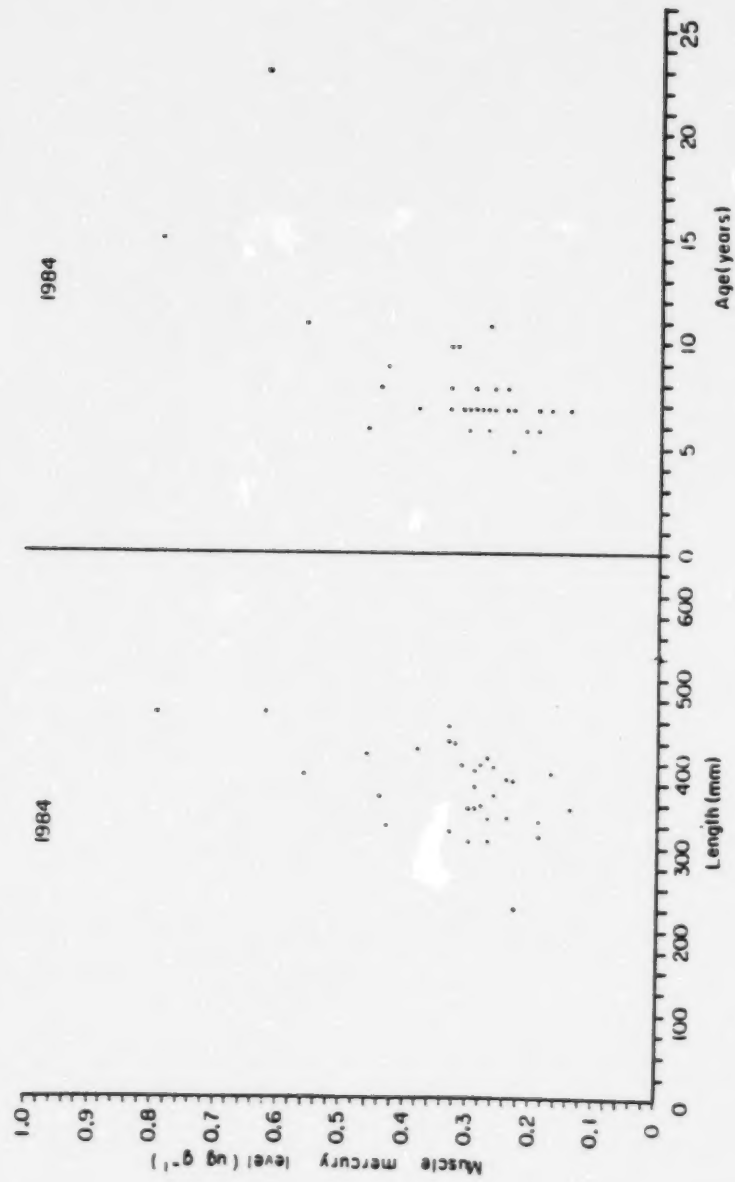
Muskwa Lake whitefish.

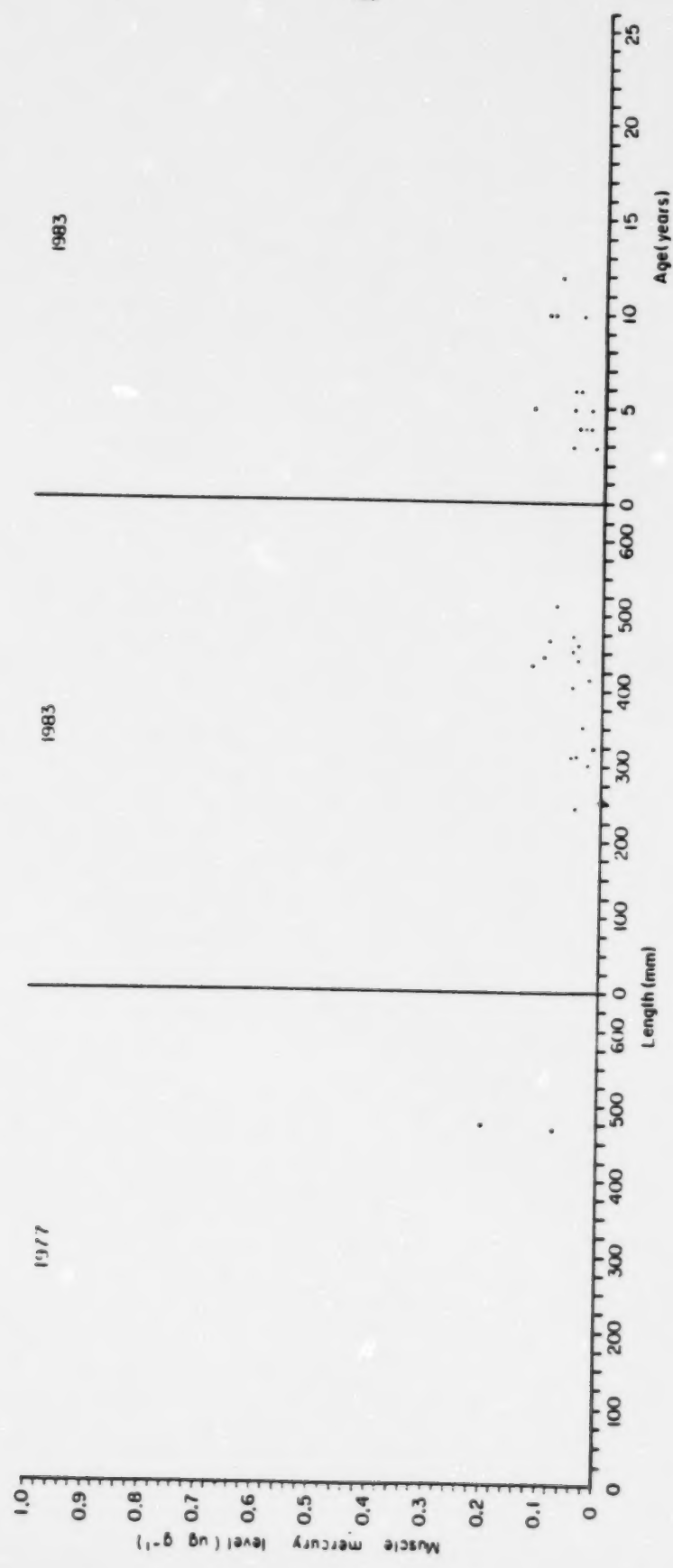


Birch Tree Lake whitefish.

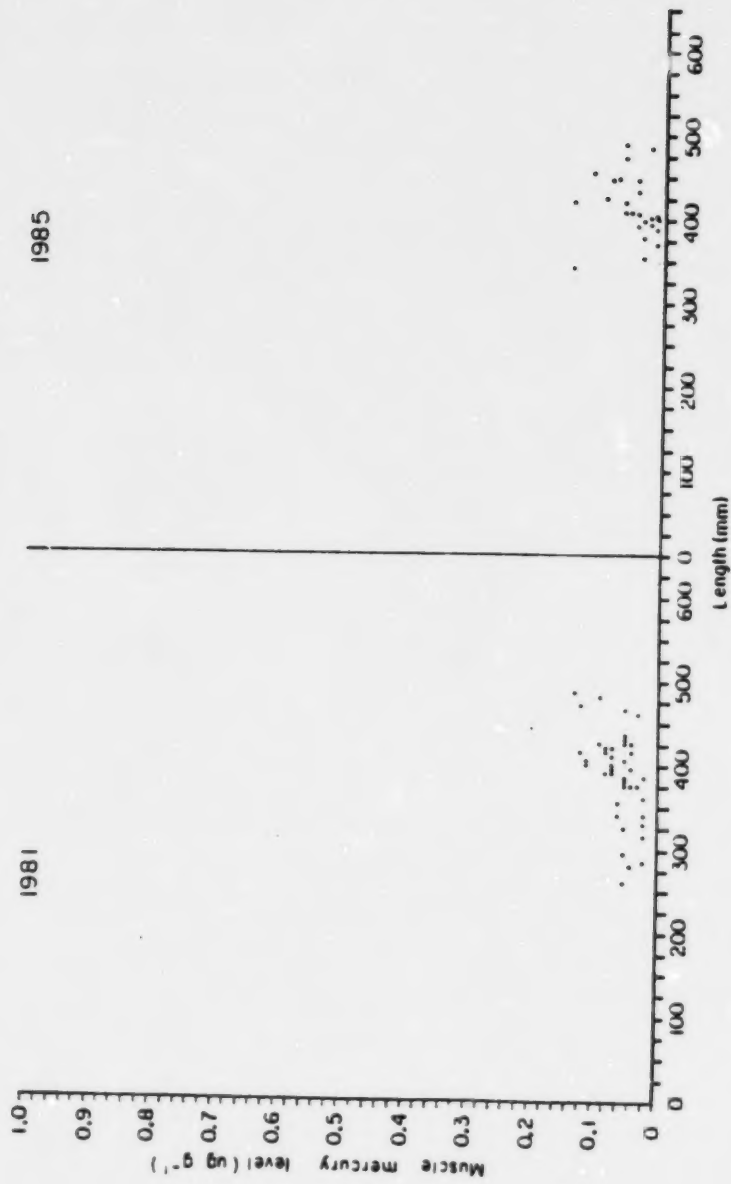


Mystery Lake whitefish.

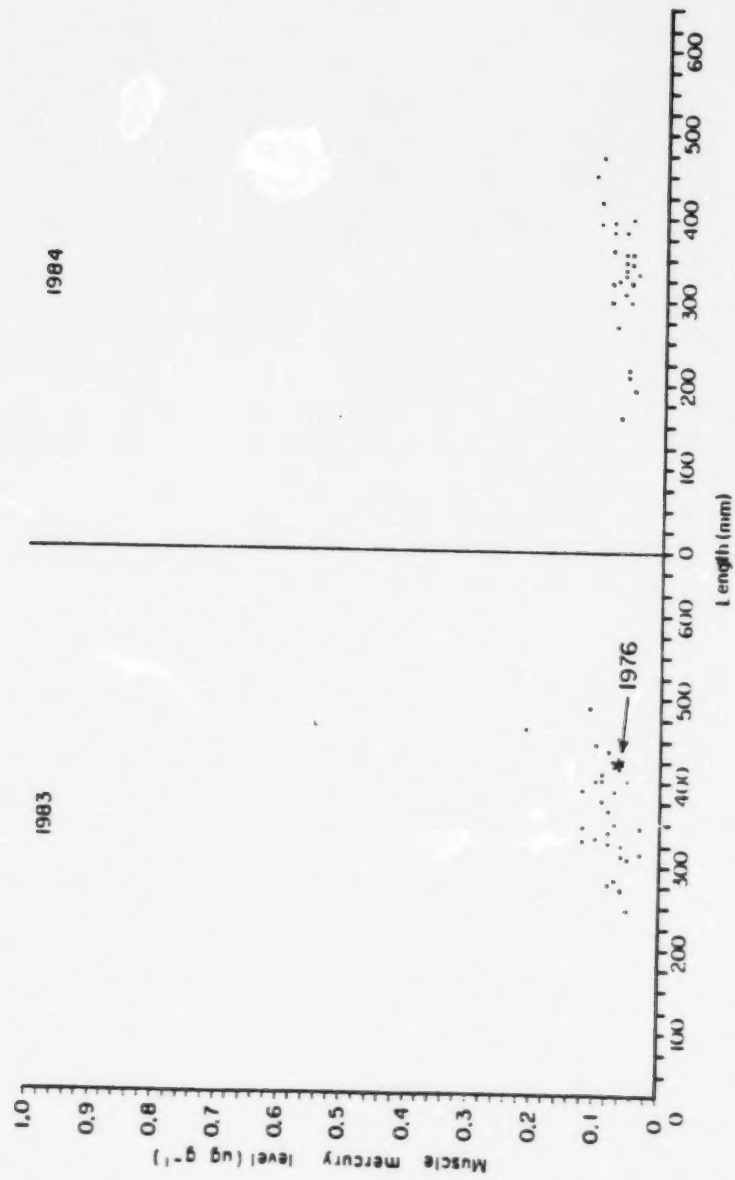




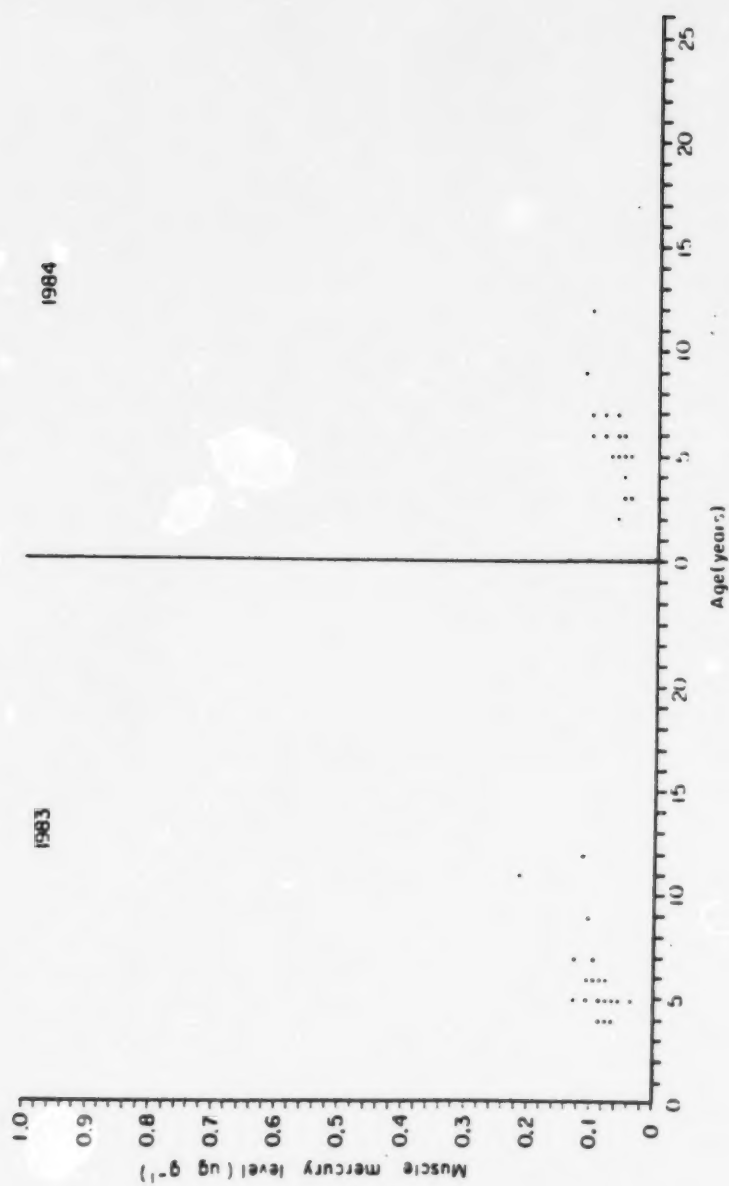
Sipiwek Lake whitefish.



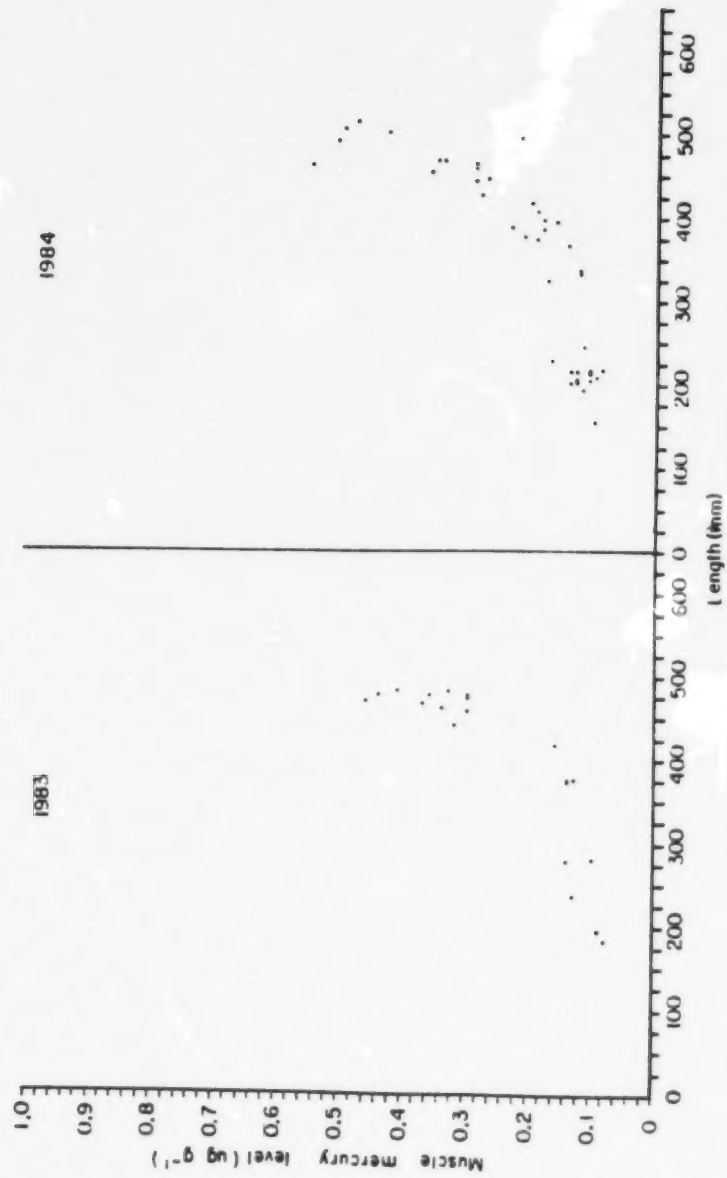
Assean Lake whitefish.



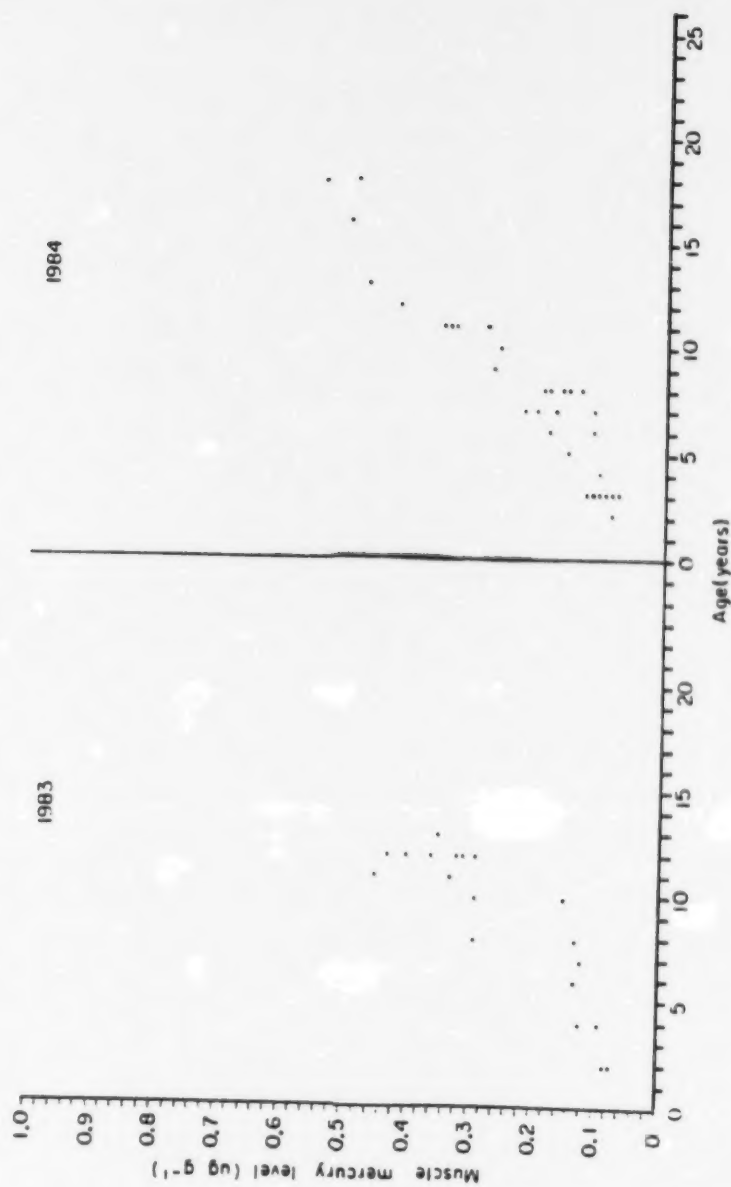
Split Lake whitefish.



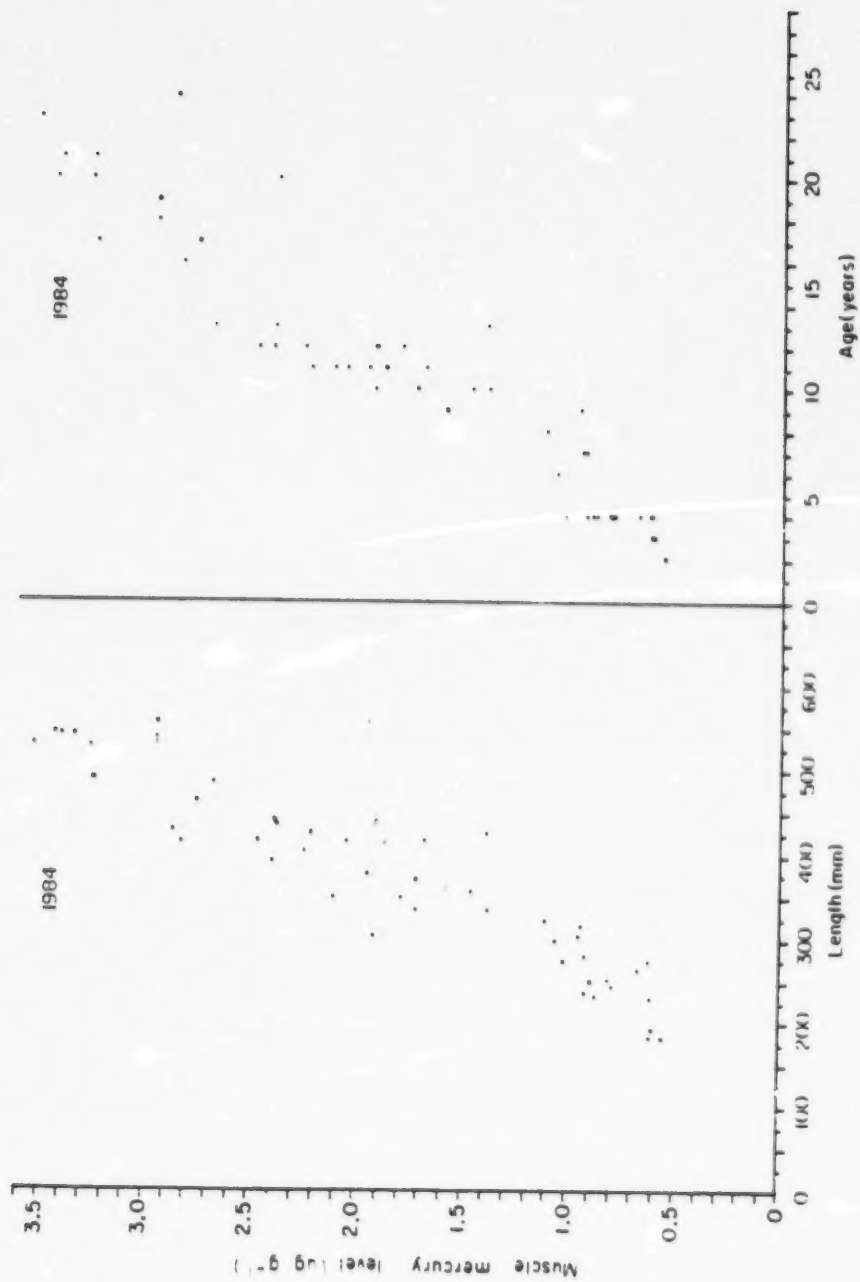
Split Lake whitefish.



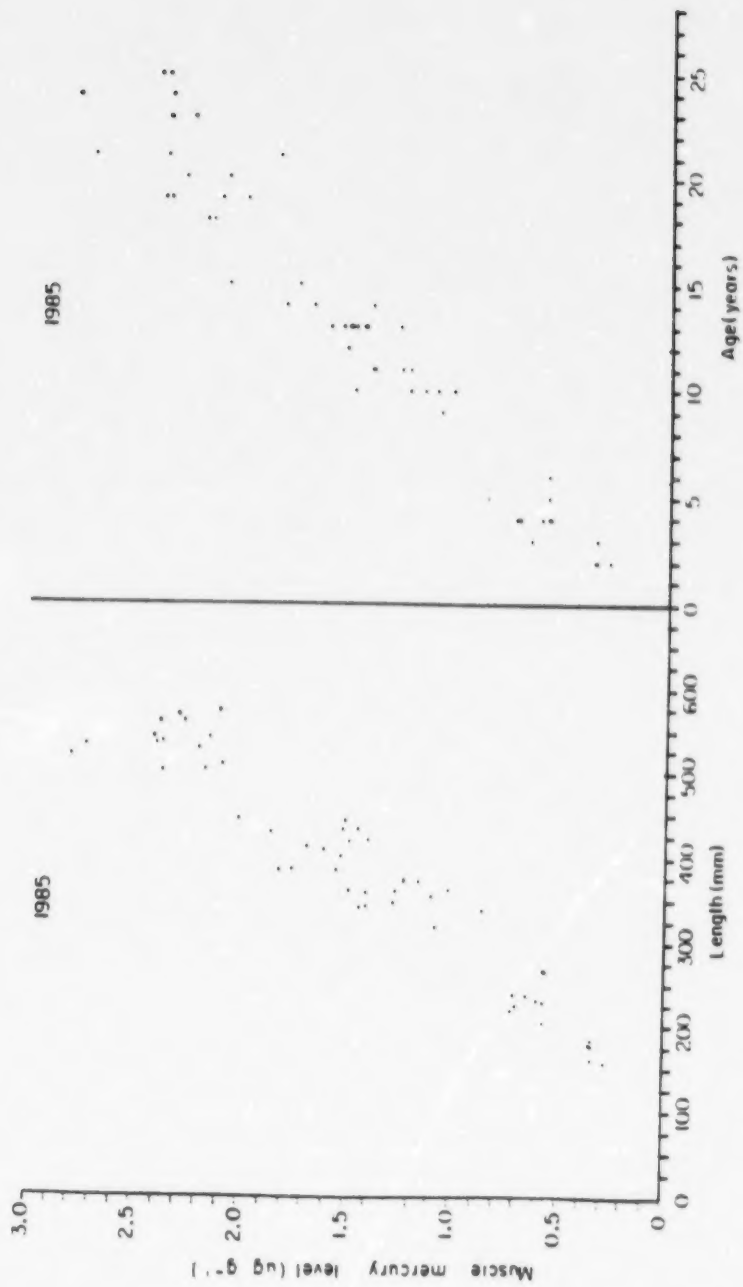
Stephens Lake whitefish.



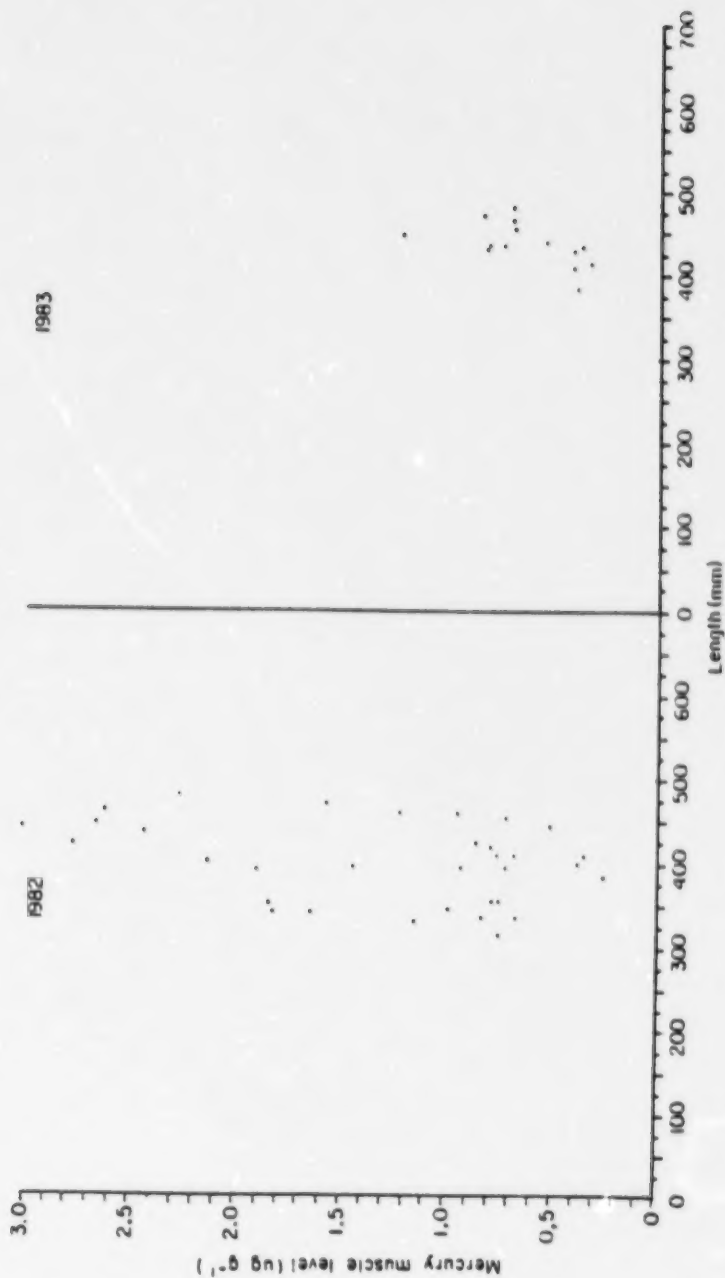
Stephens Lake whitefish.



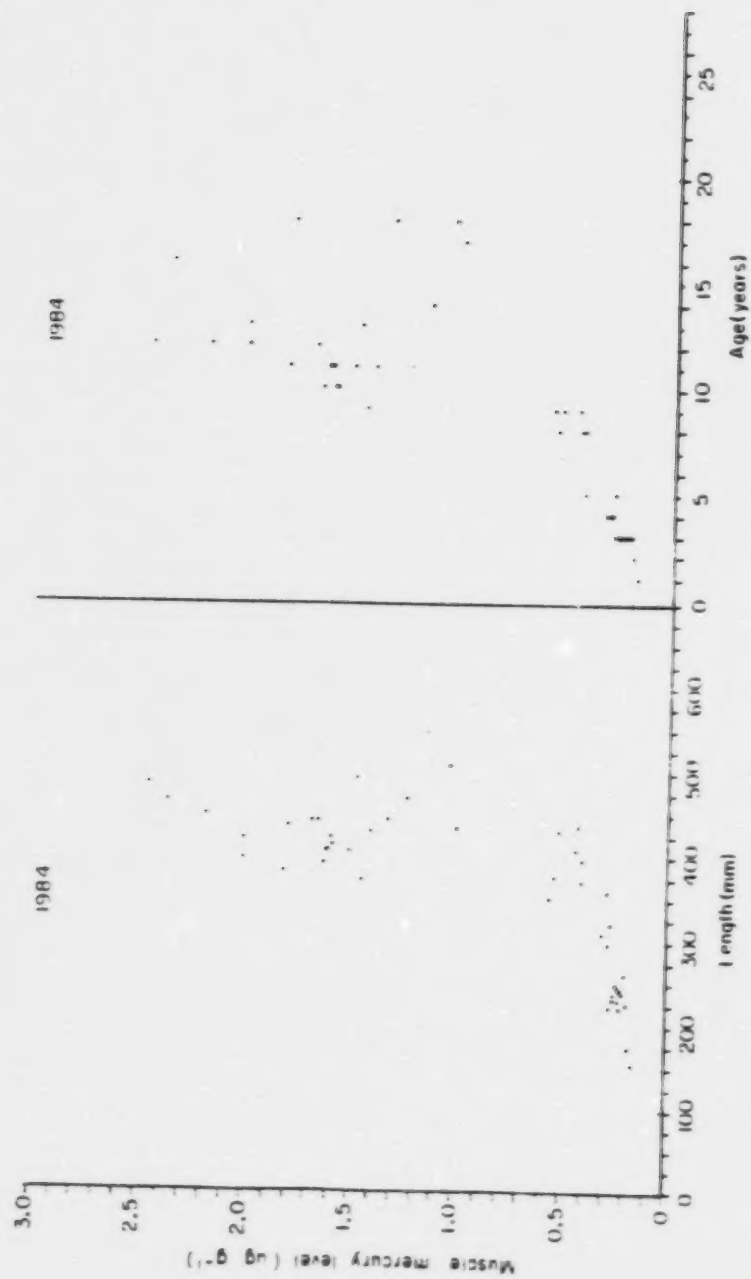
Karsakuwigamak Lake walleye.



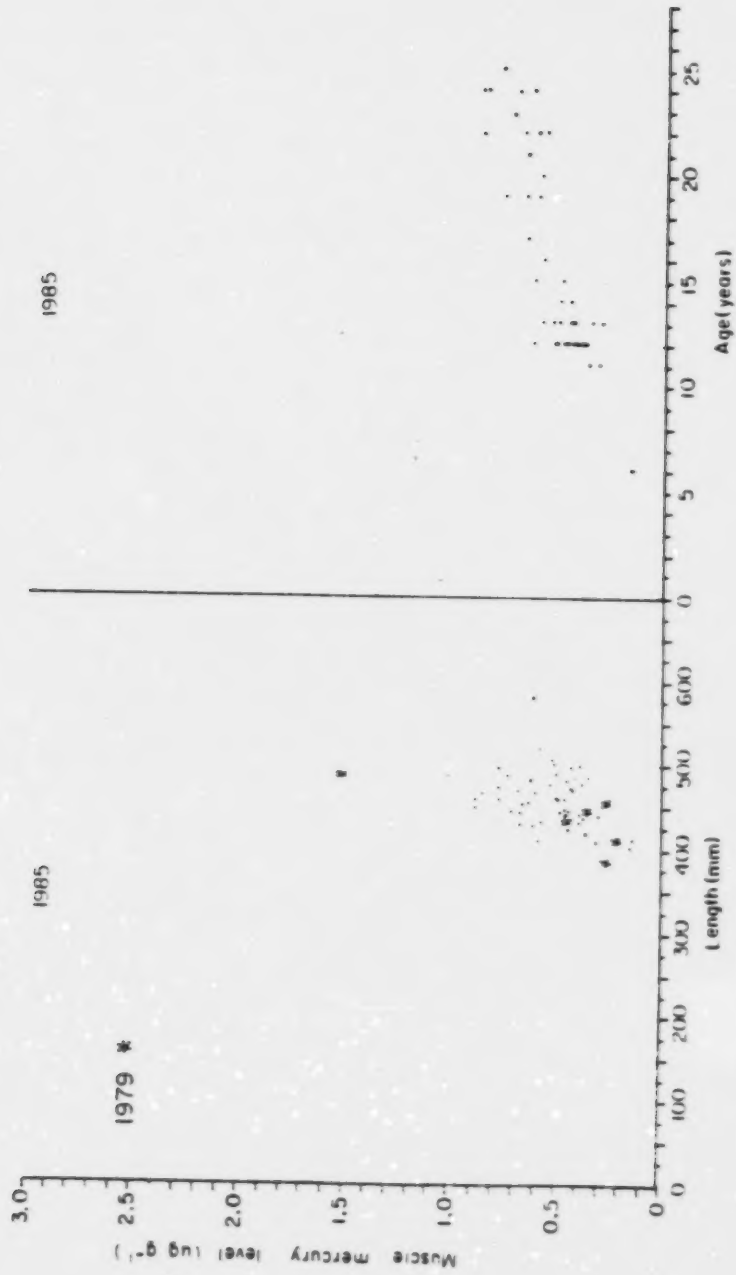
Pemichigamau Lake walleye.



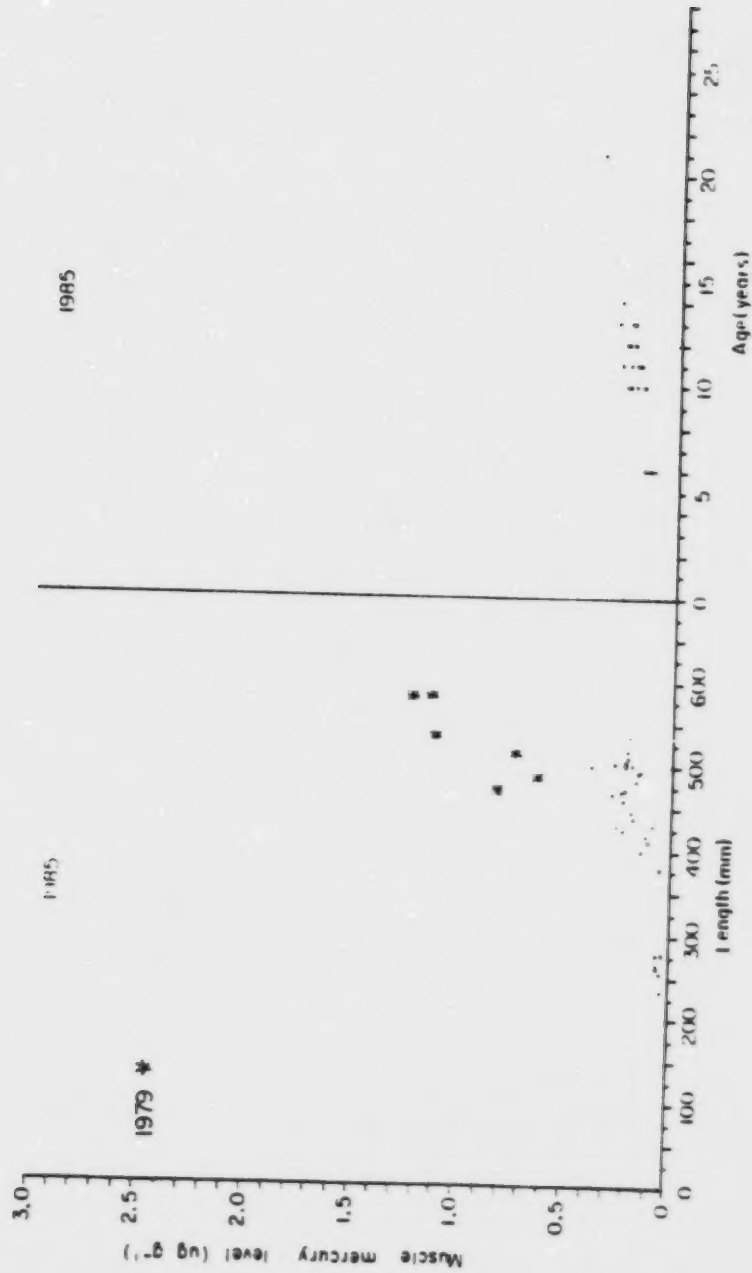
West & Central Nynarski Lake walleye.



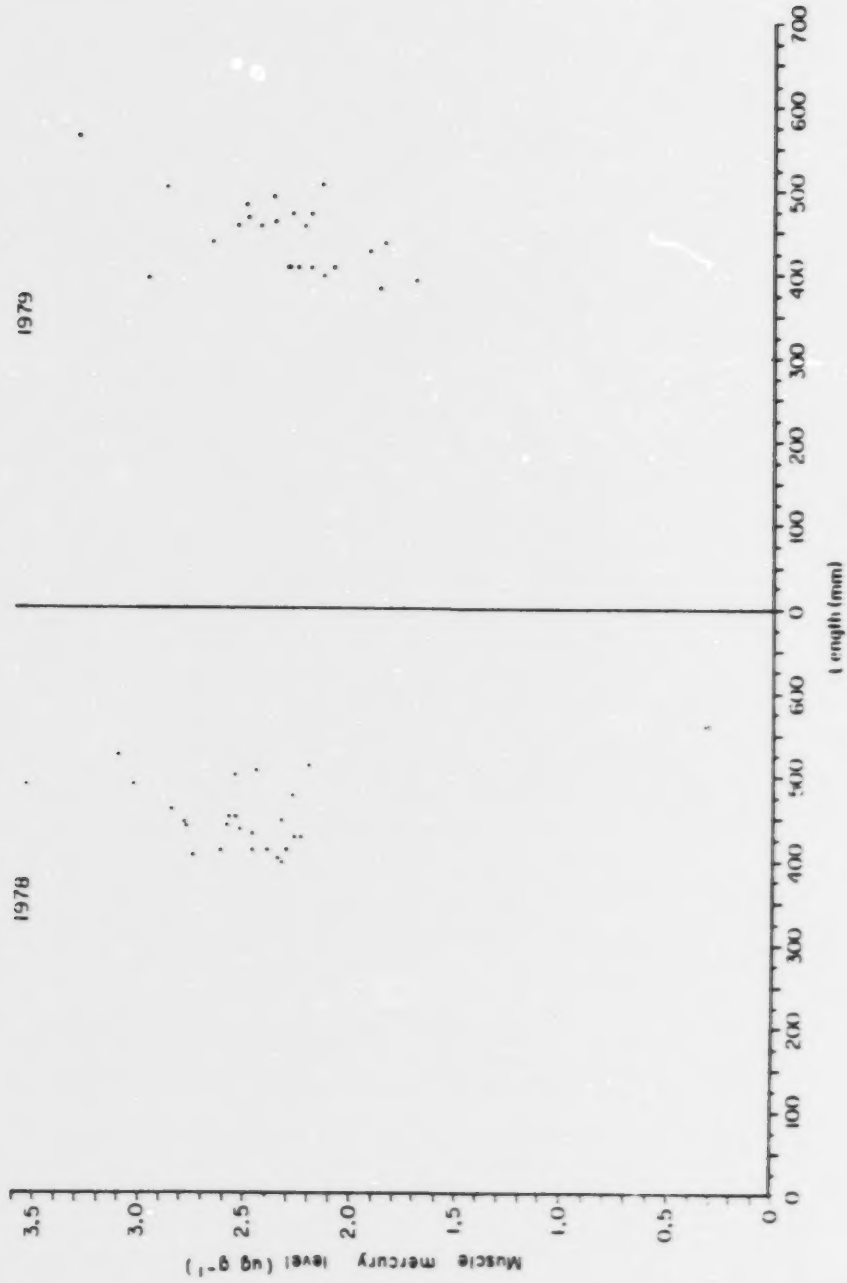
West & Central Mynarski Lake walleye.



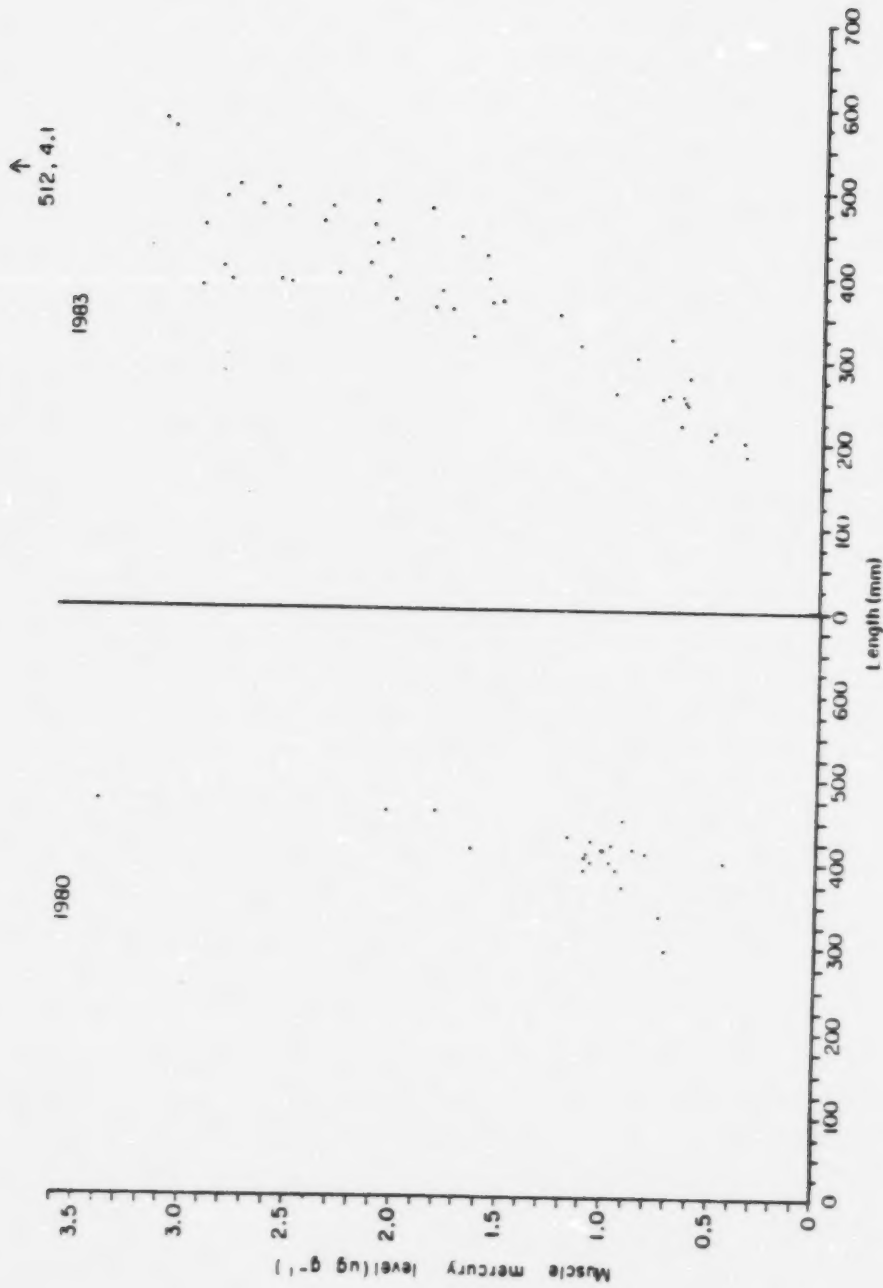
Costello Lake walleye.



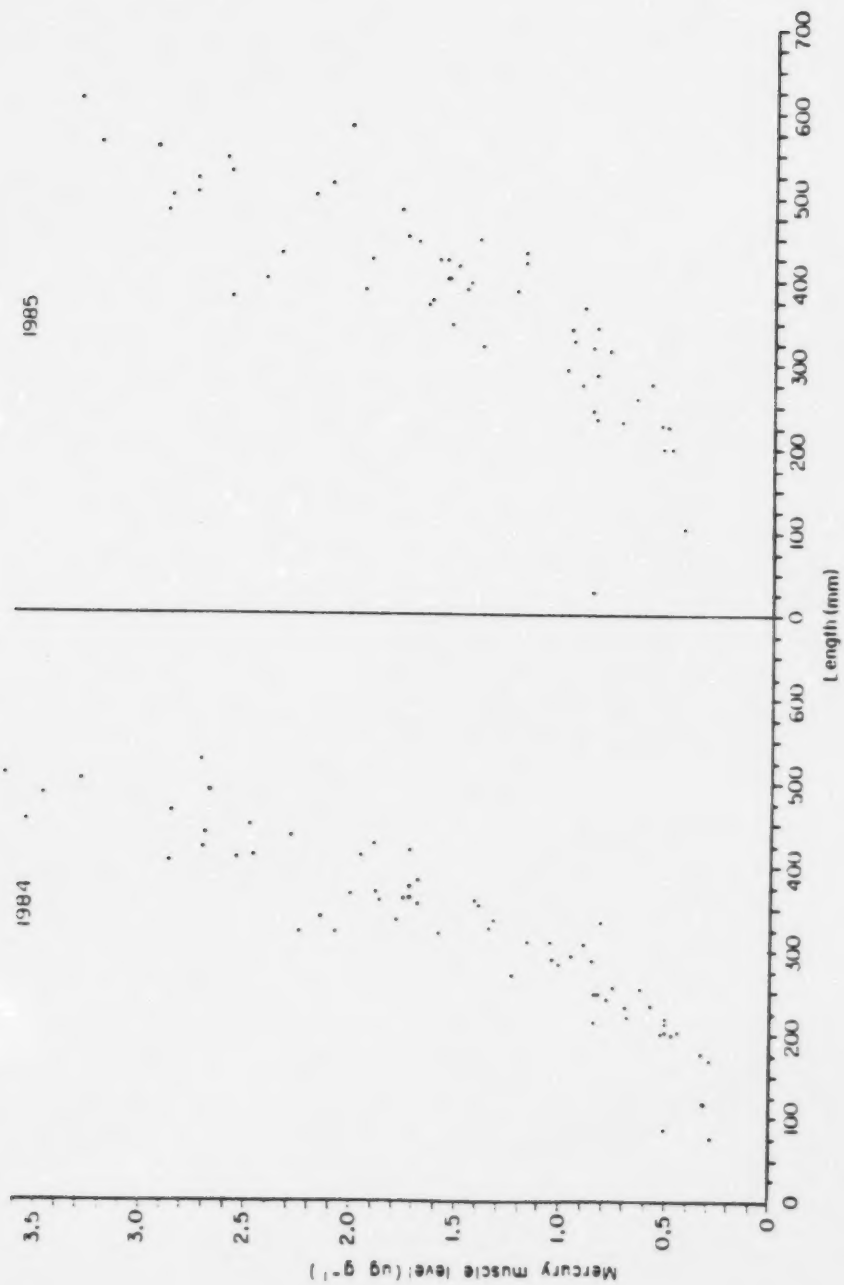
Suwannee Lake walleye.



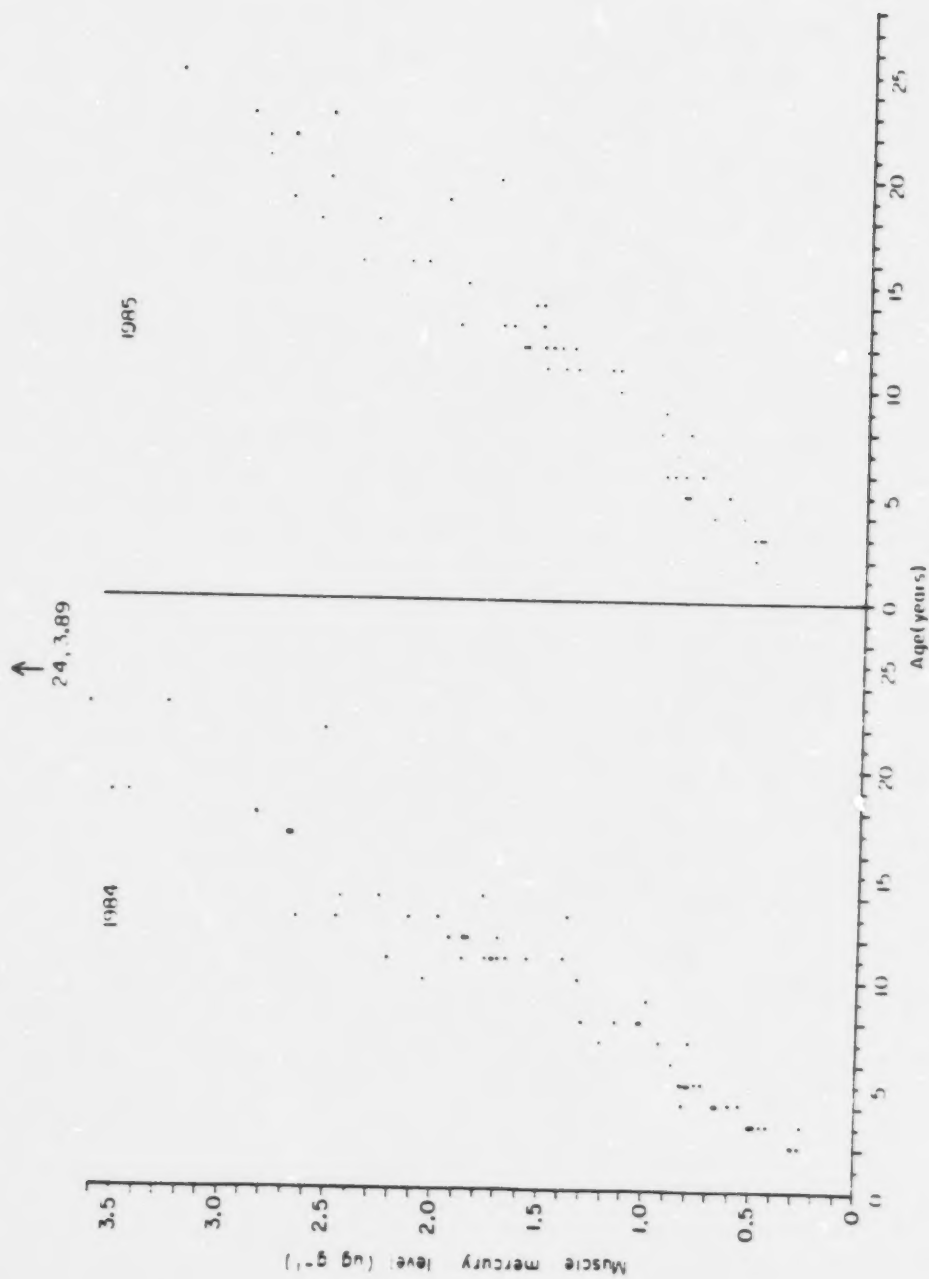
Rat Lake walleye.



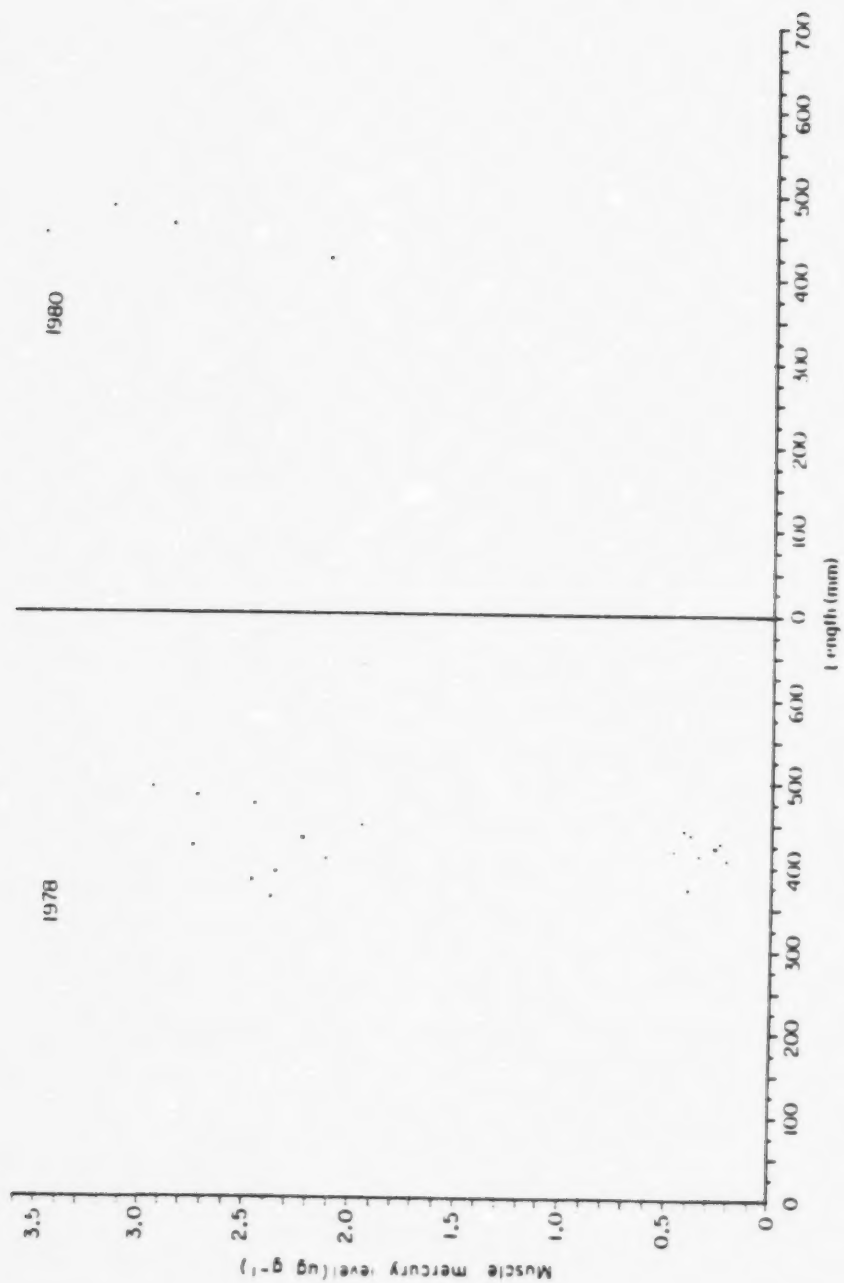
Rat Lake walleye.



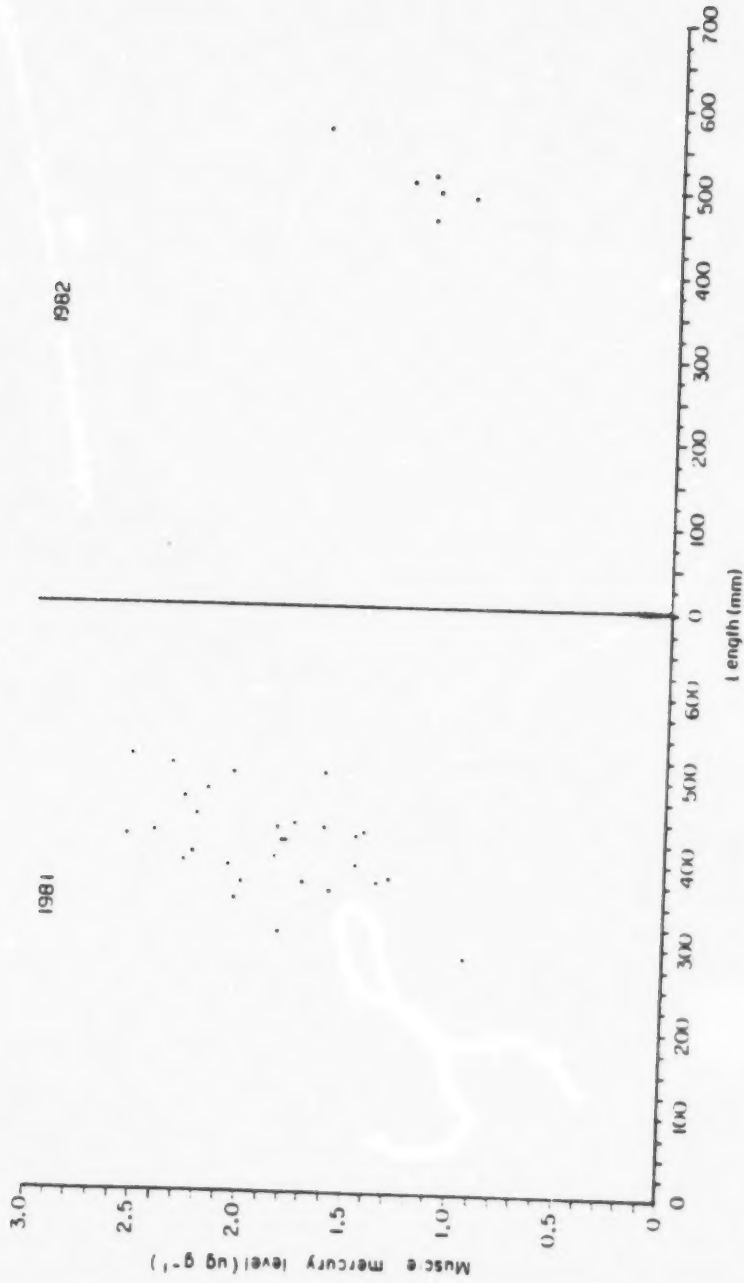
Rat Lake walleye.



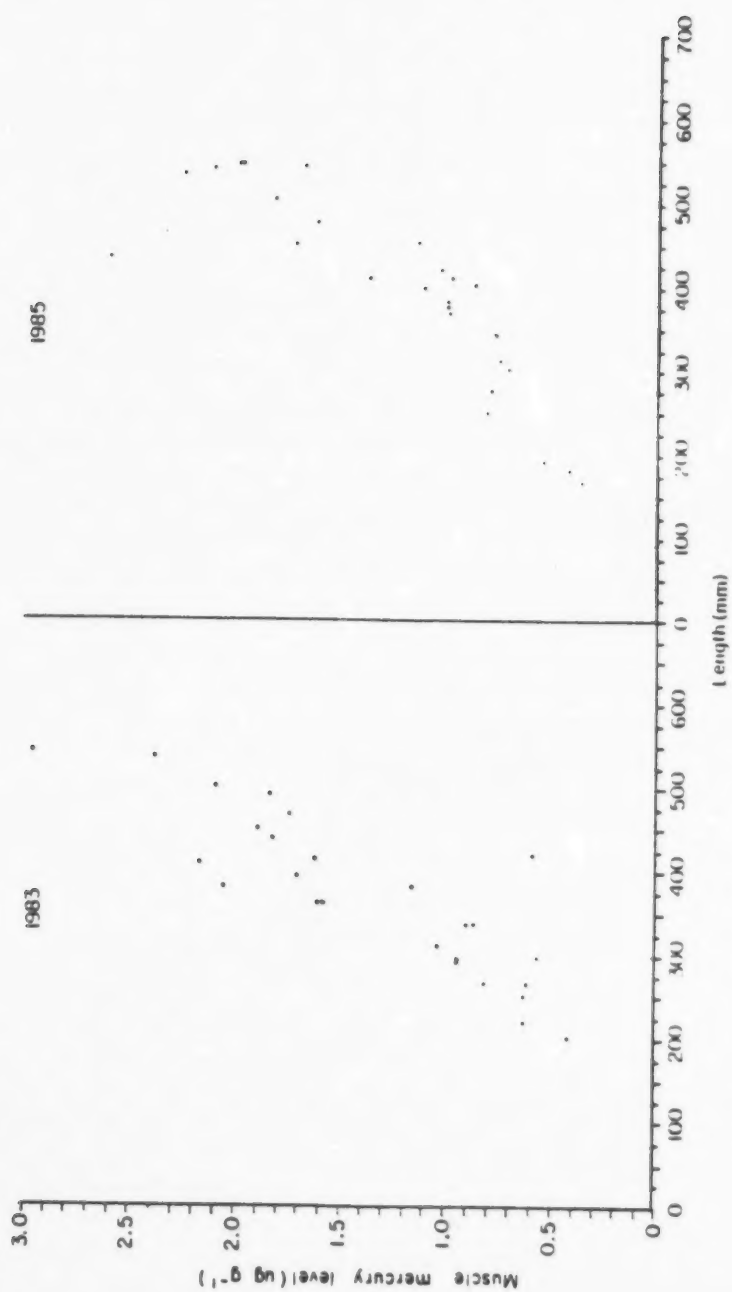
Rat Lake walleye.



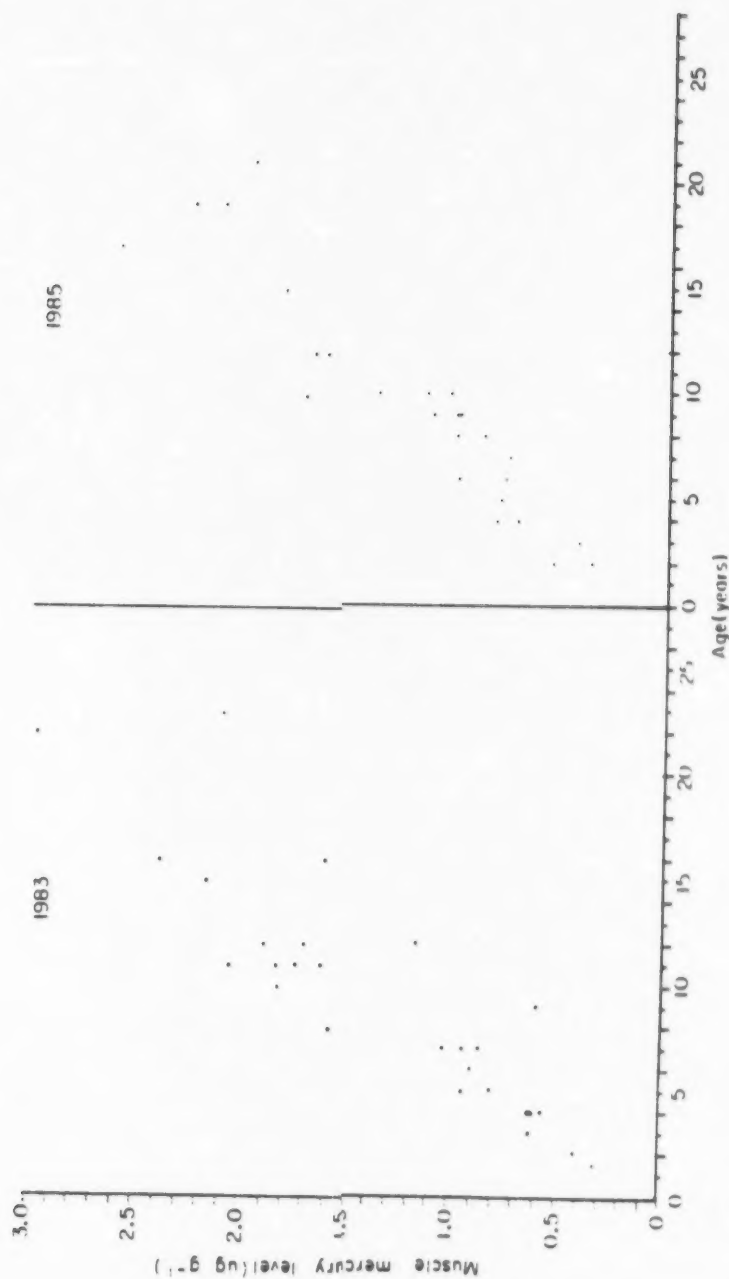
Notigi Lake walleye.



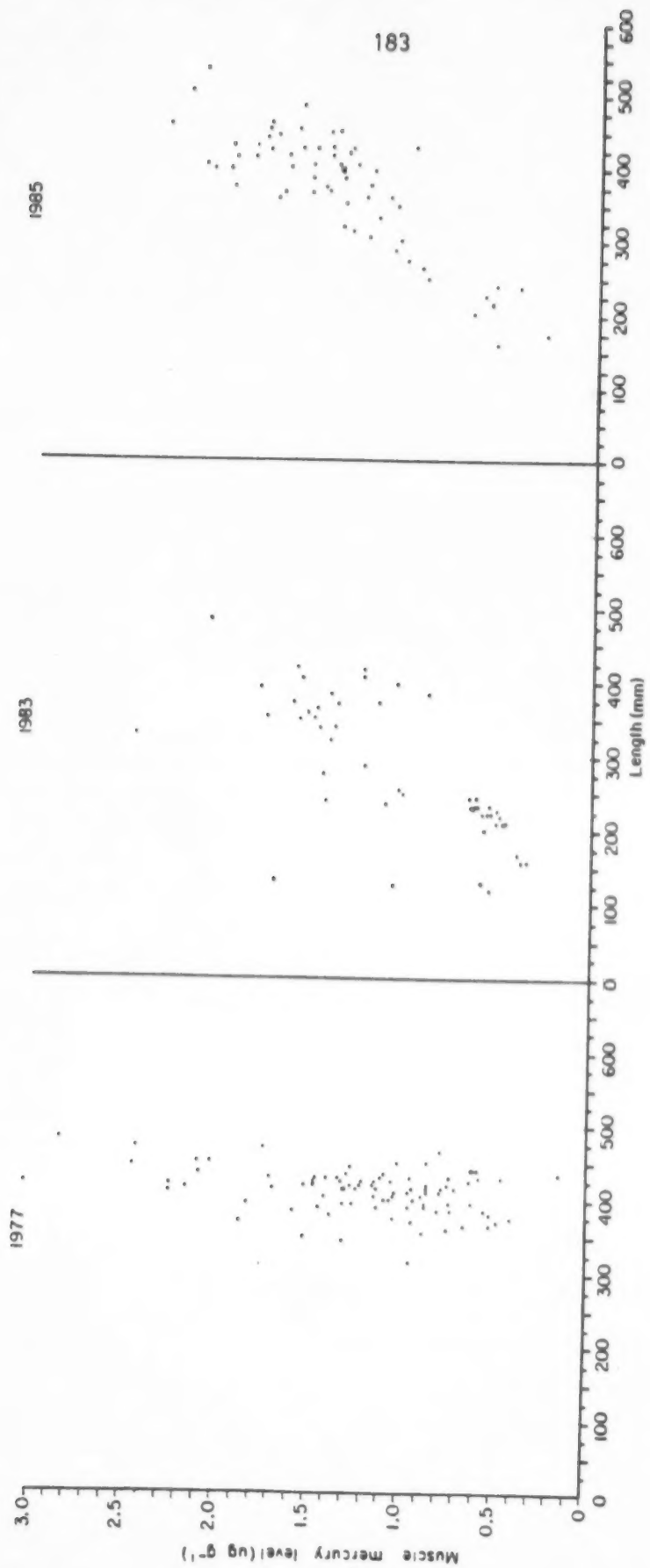
Notigi Lake walleye.



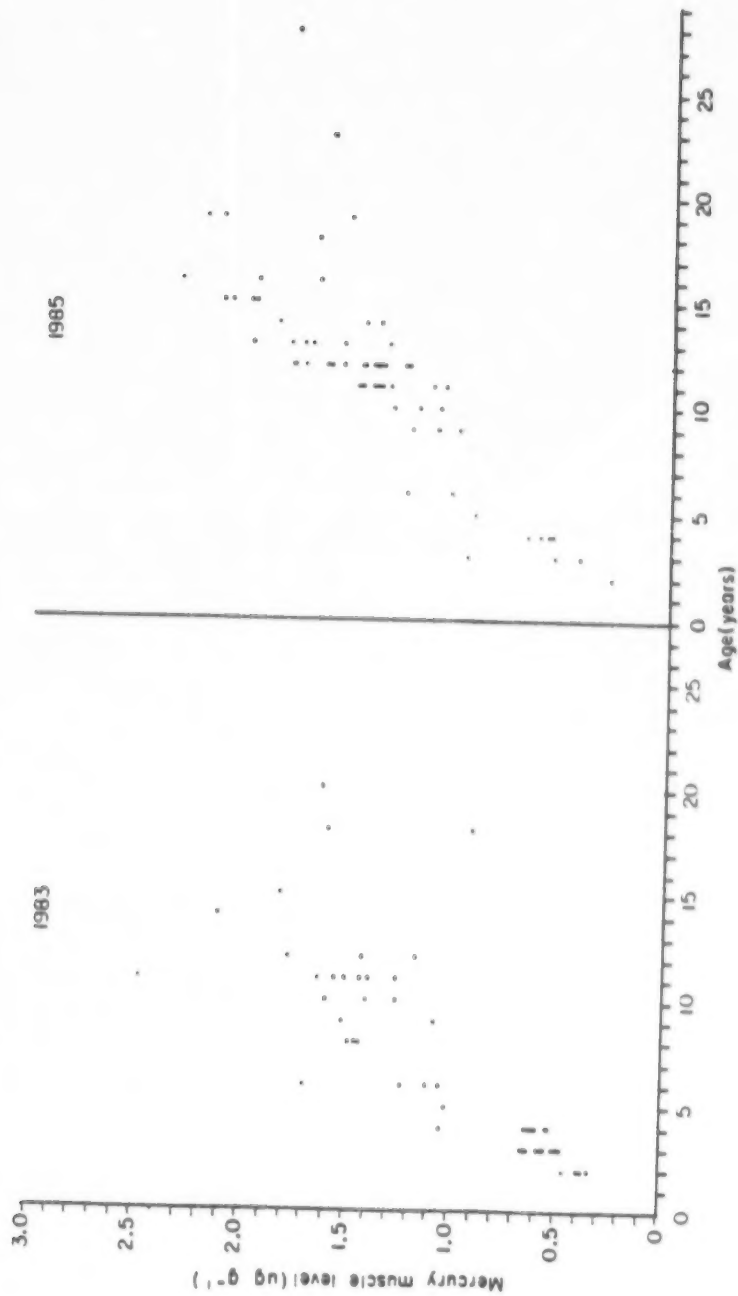
Notigi Lake walleye.



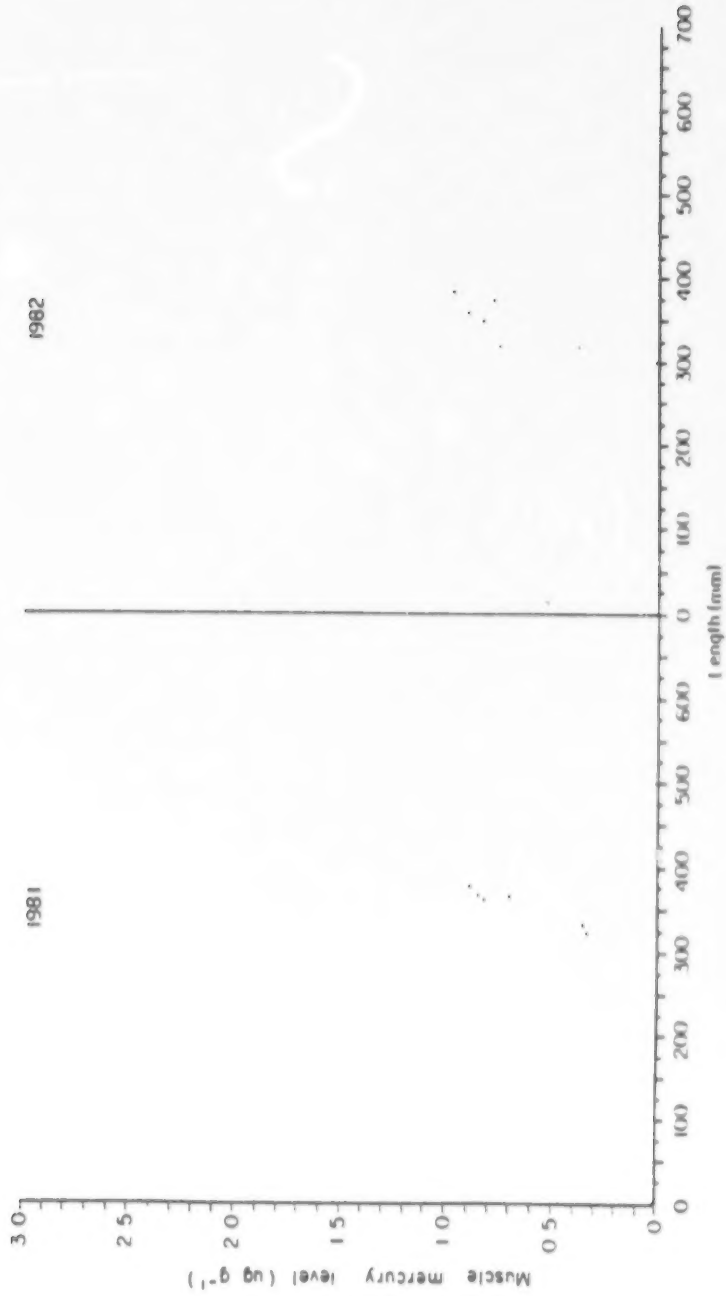
Notigi Lake walleye.



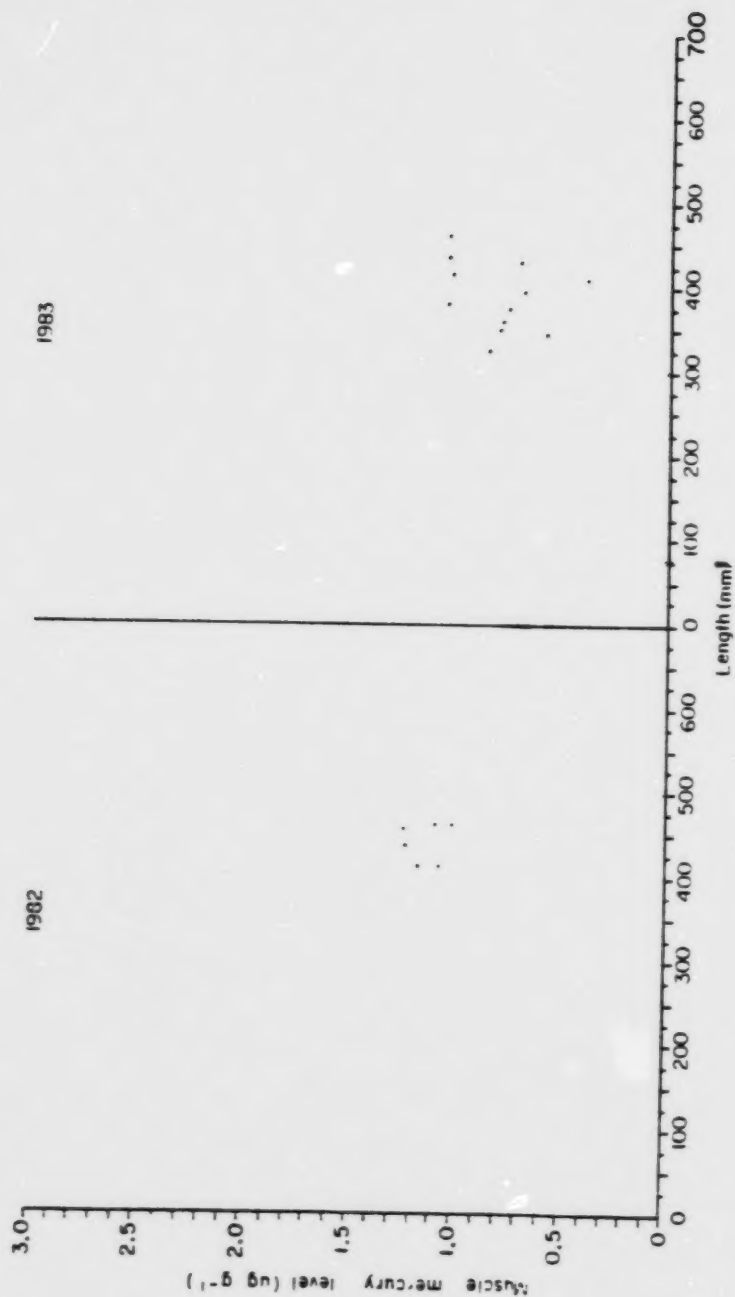
Wapitu Lake walleye.



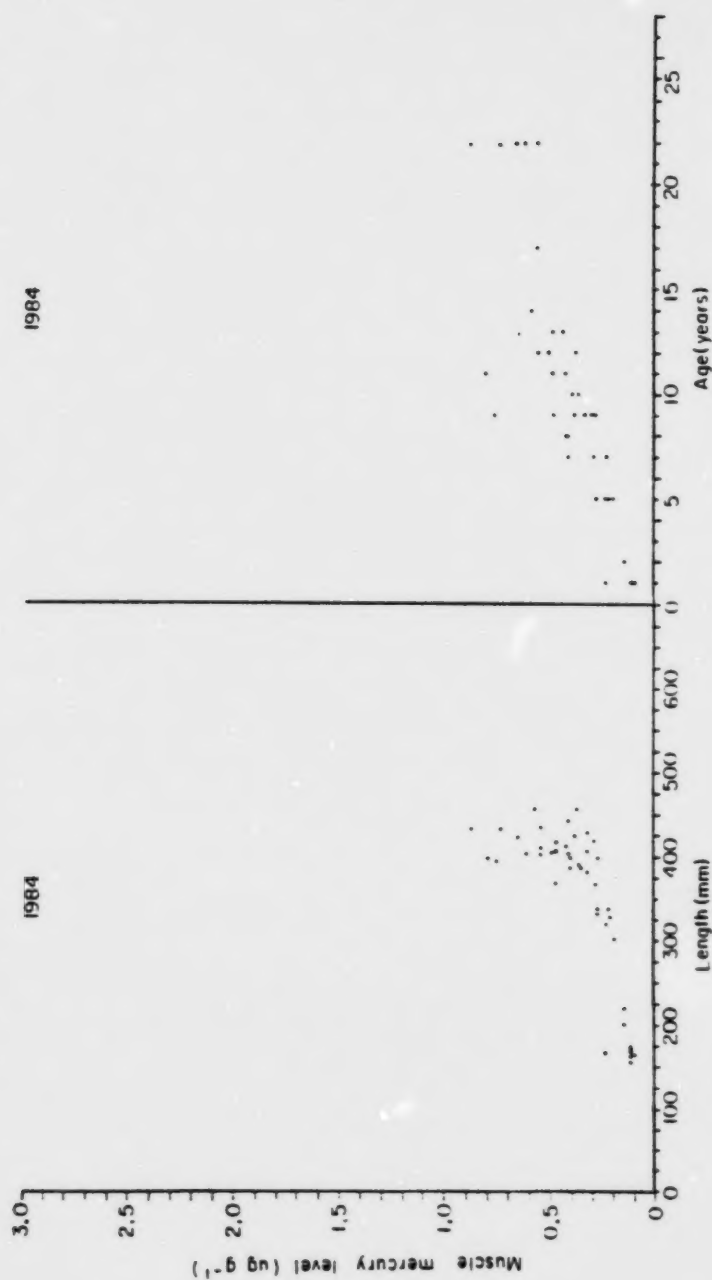
Wapitu Lake walleye.



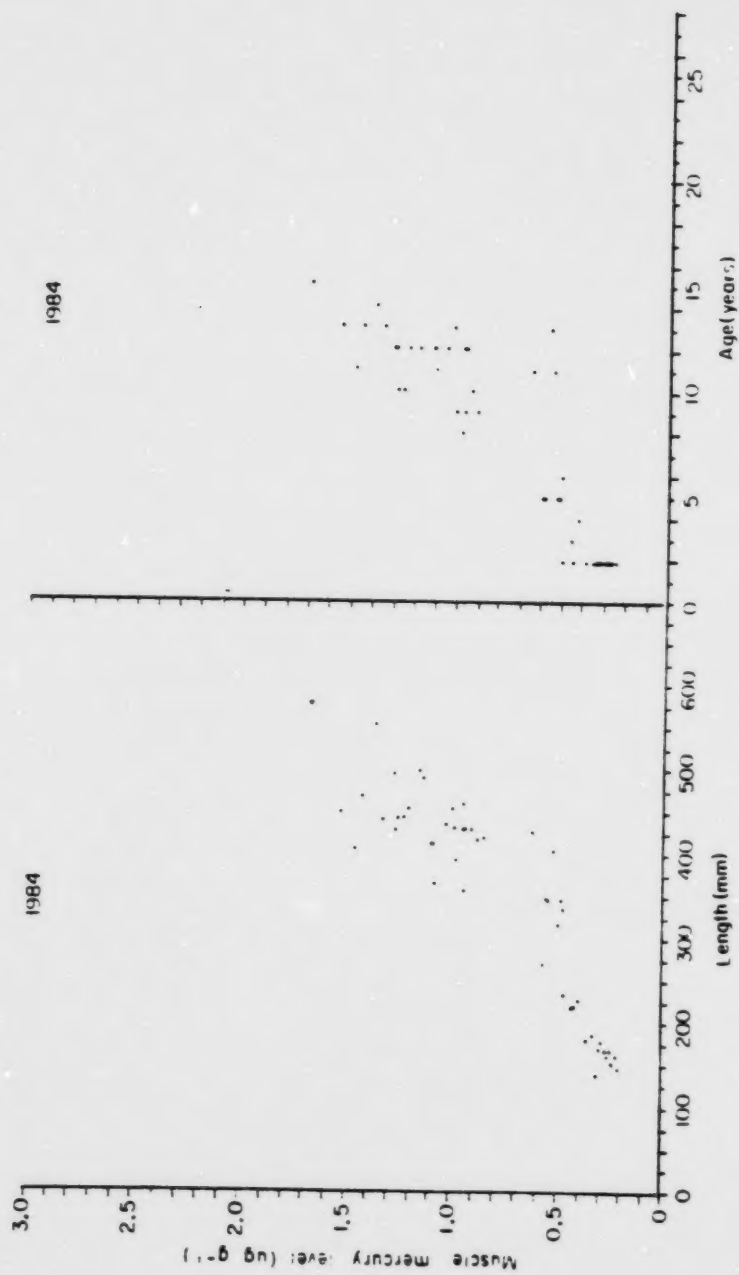
Hacheewin Lake walleye.



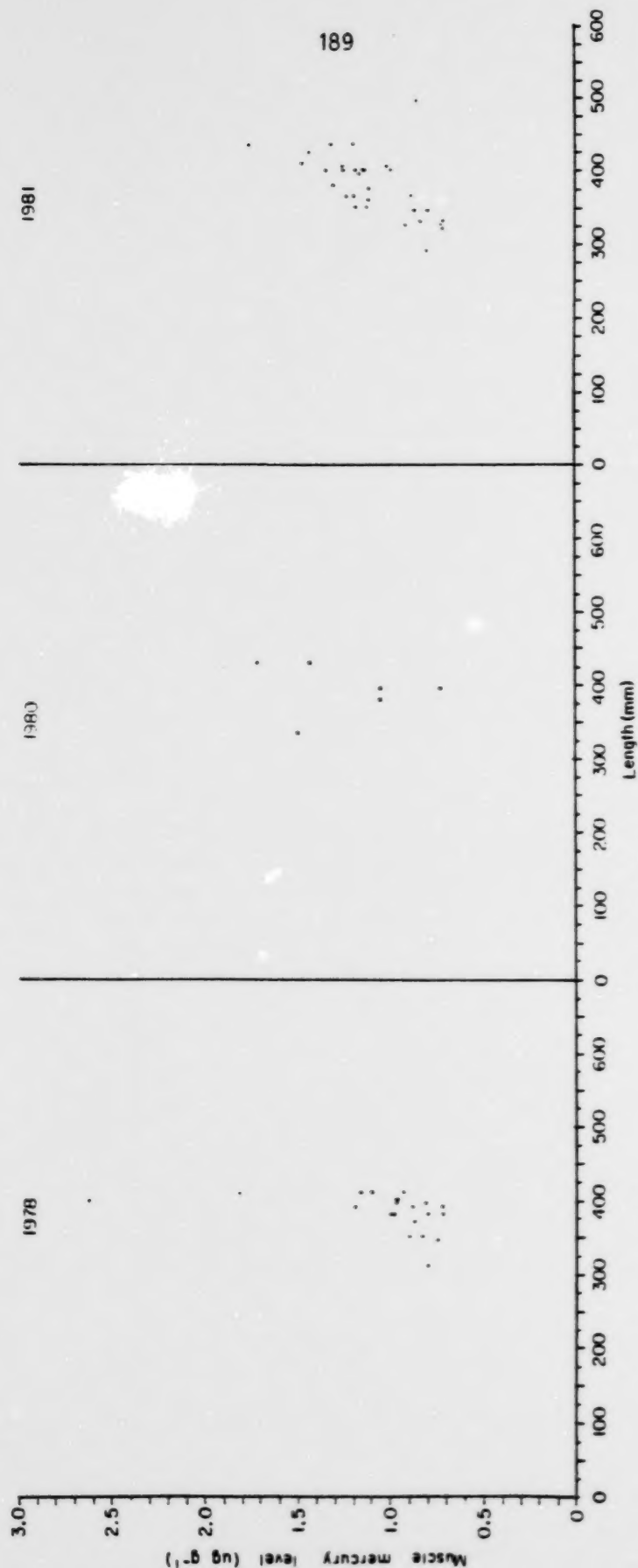
Osik Lake walleye.



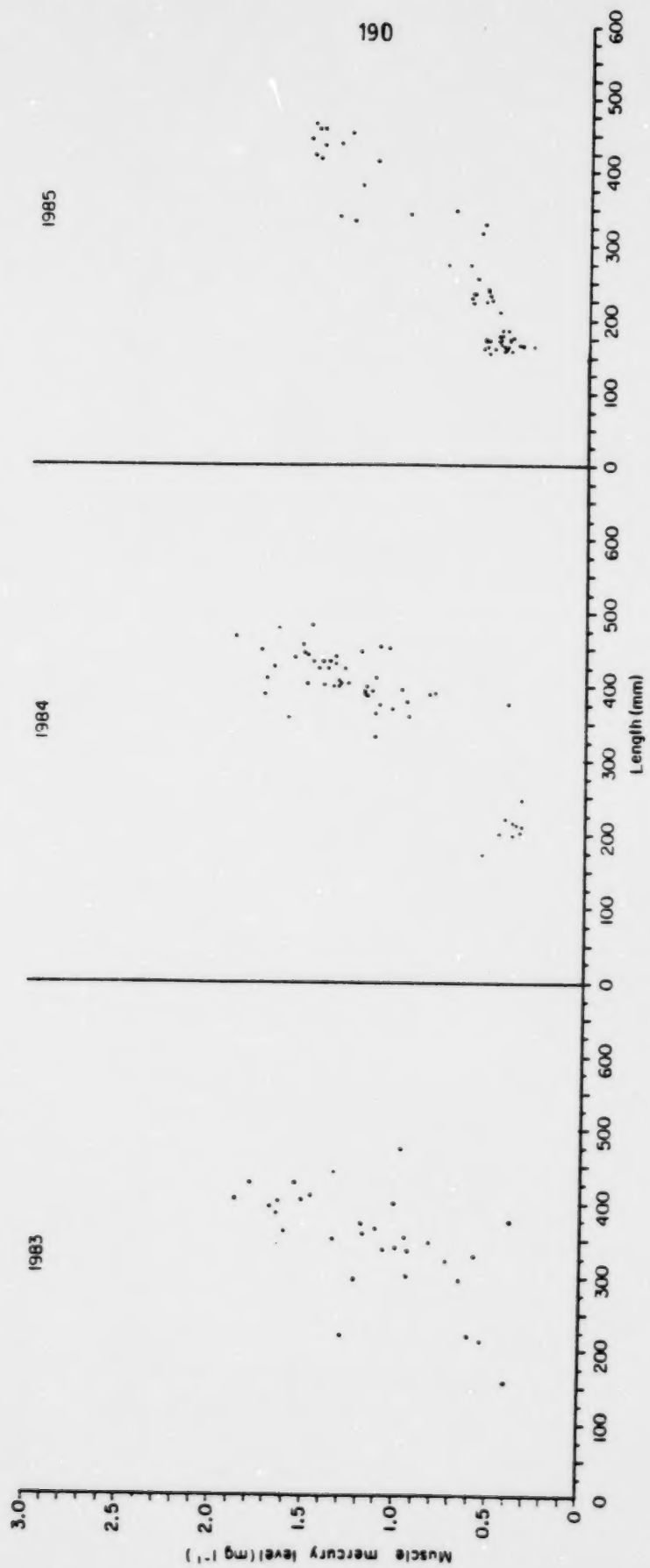
Macheewin Lake walleye.



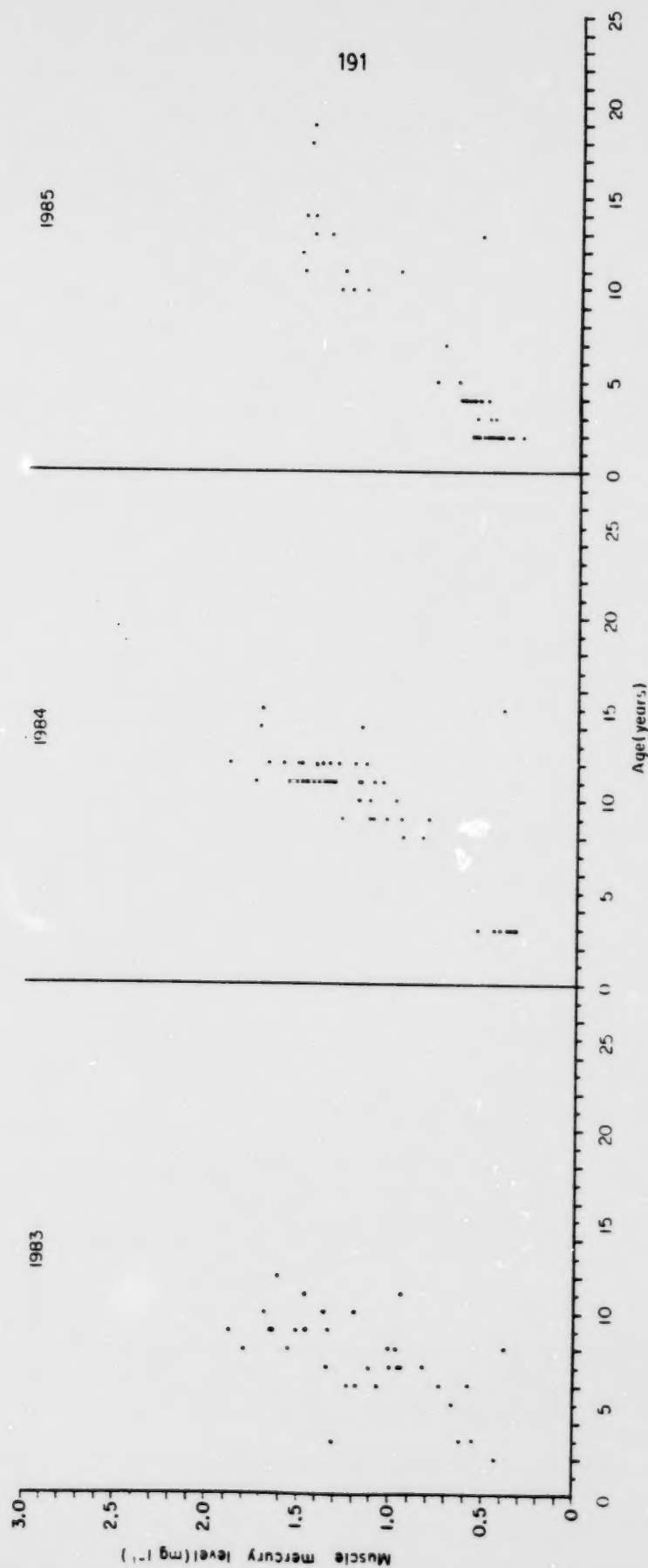
Osik Lake walleye.



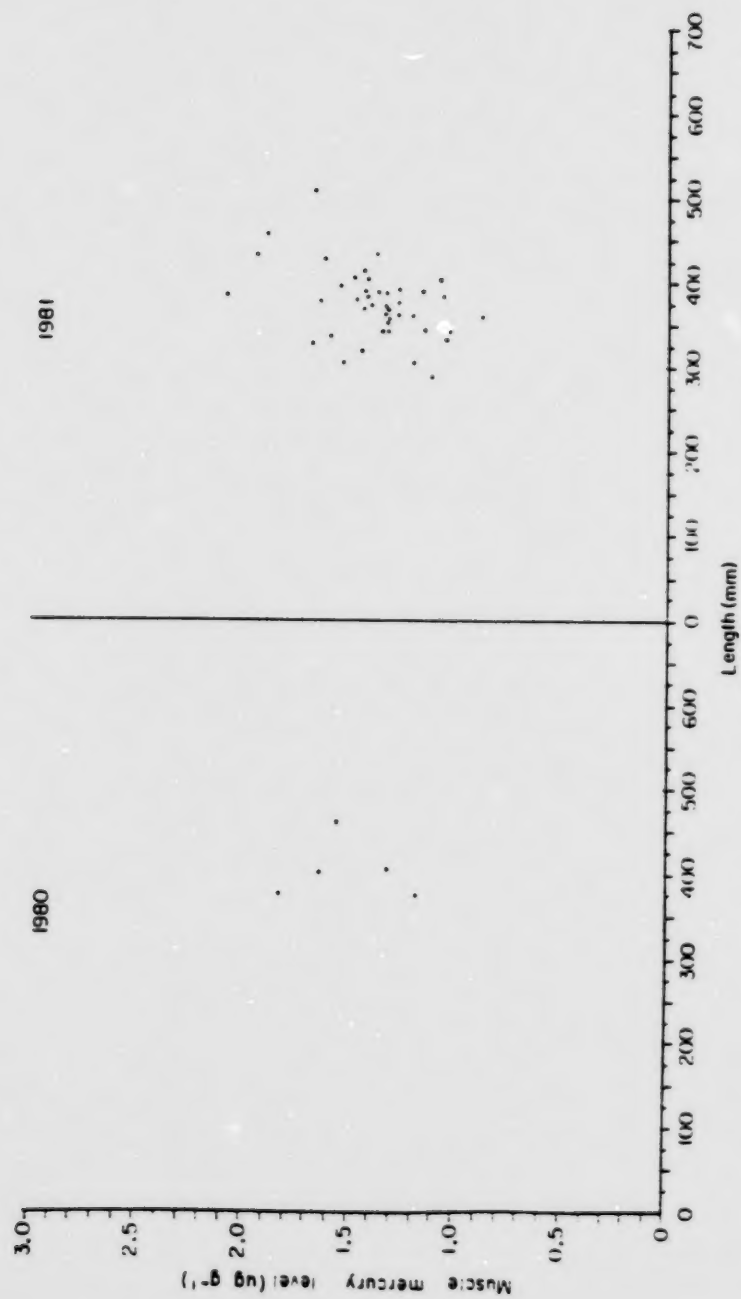
Footprint Lake walleye.



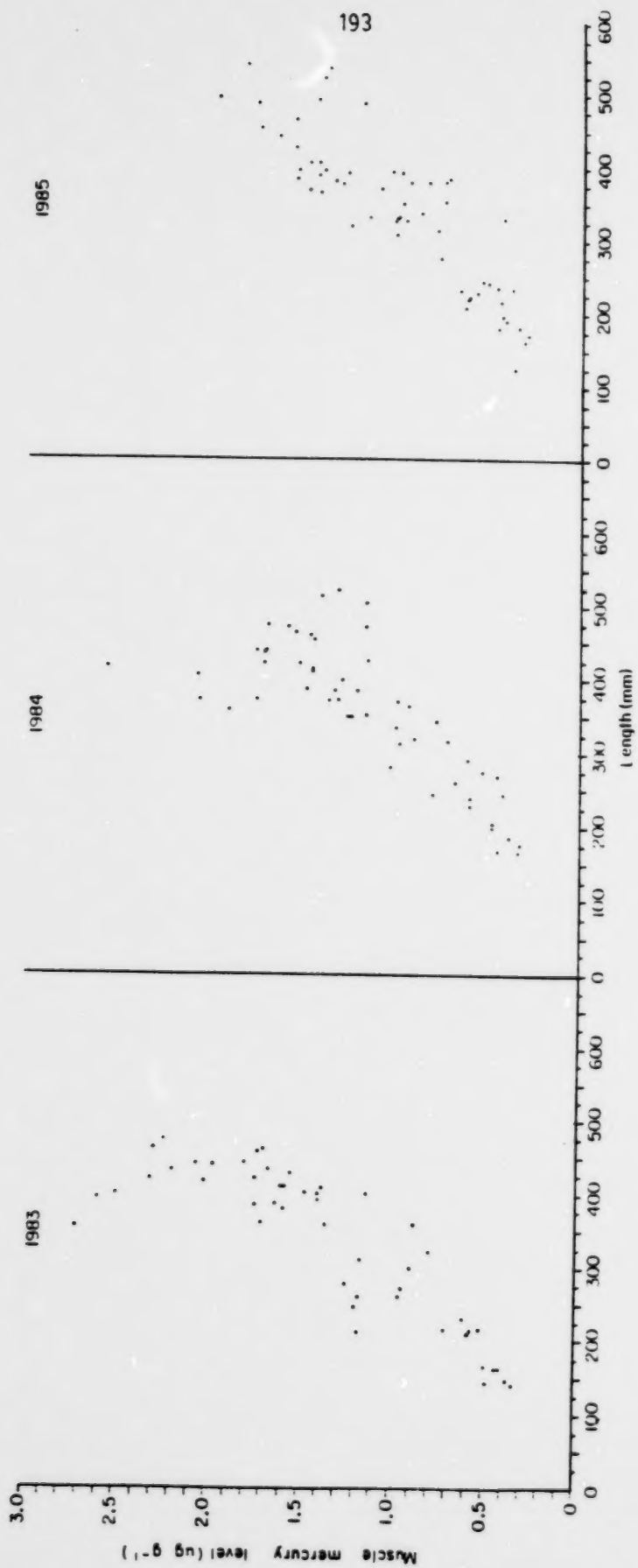
Footprint Lake walleye.



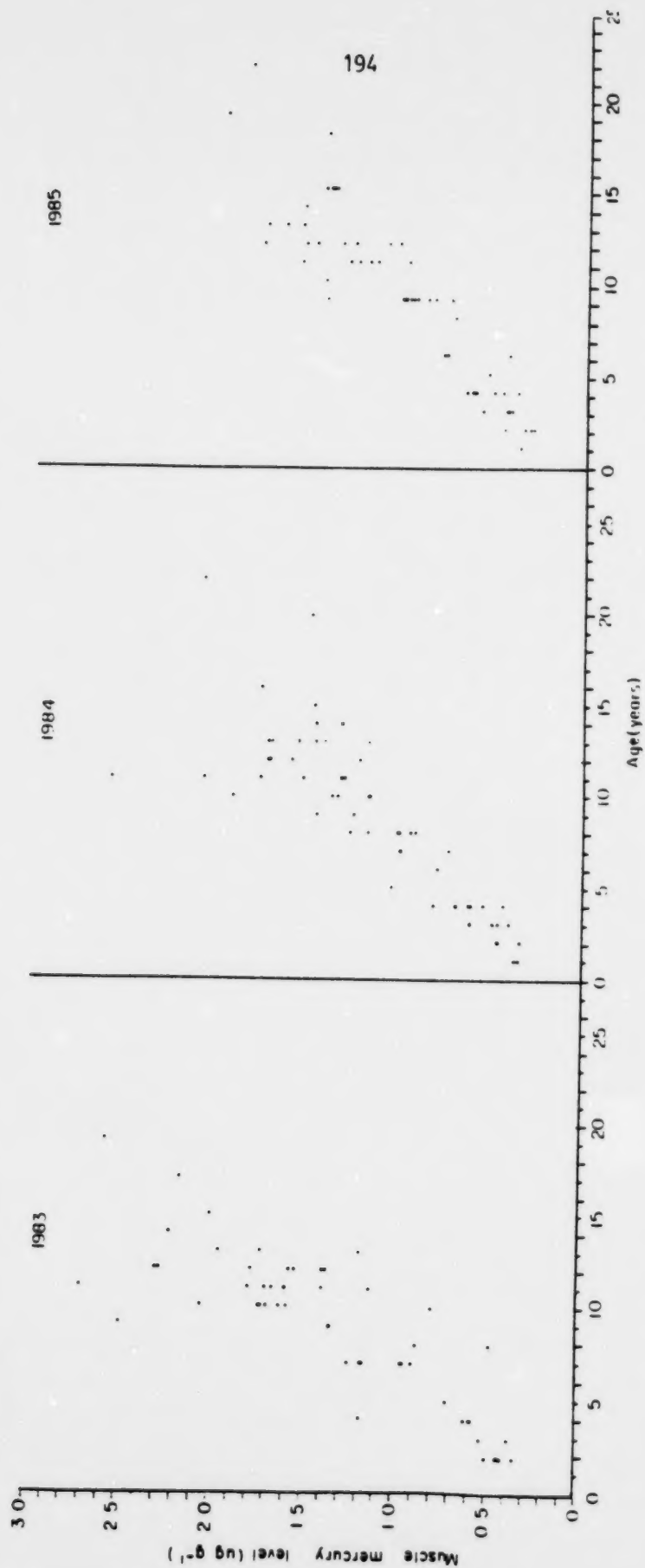
Footprint Lake walleye.



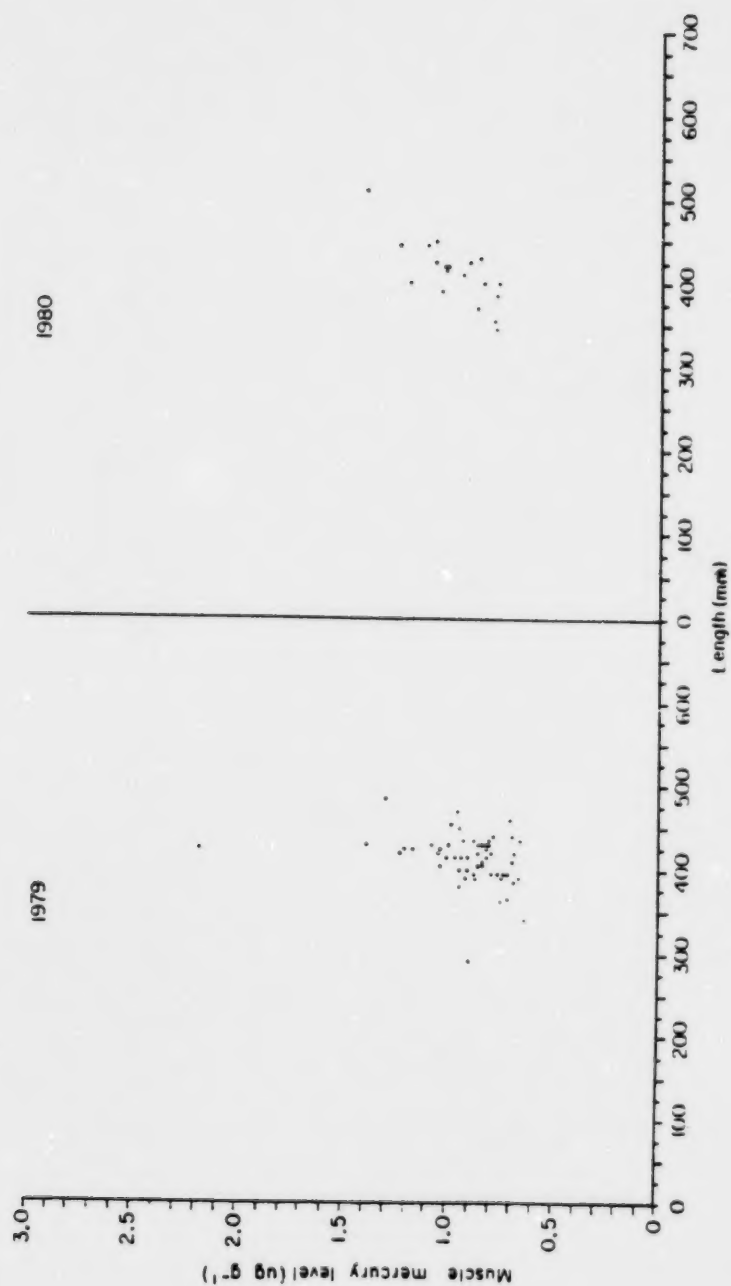
Threepoint Lake walleye.



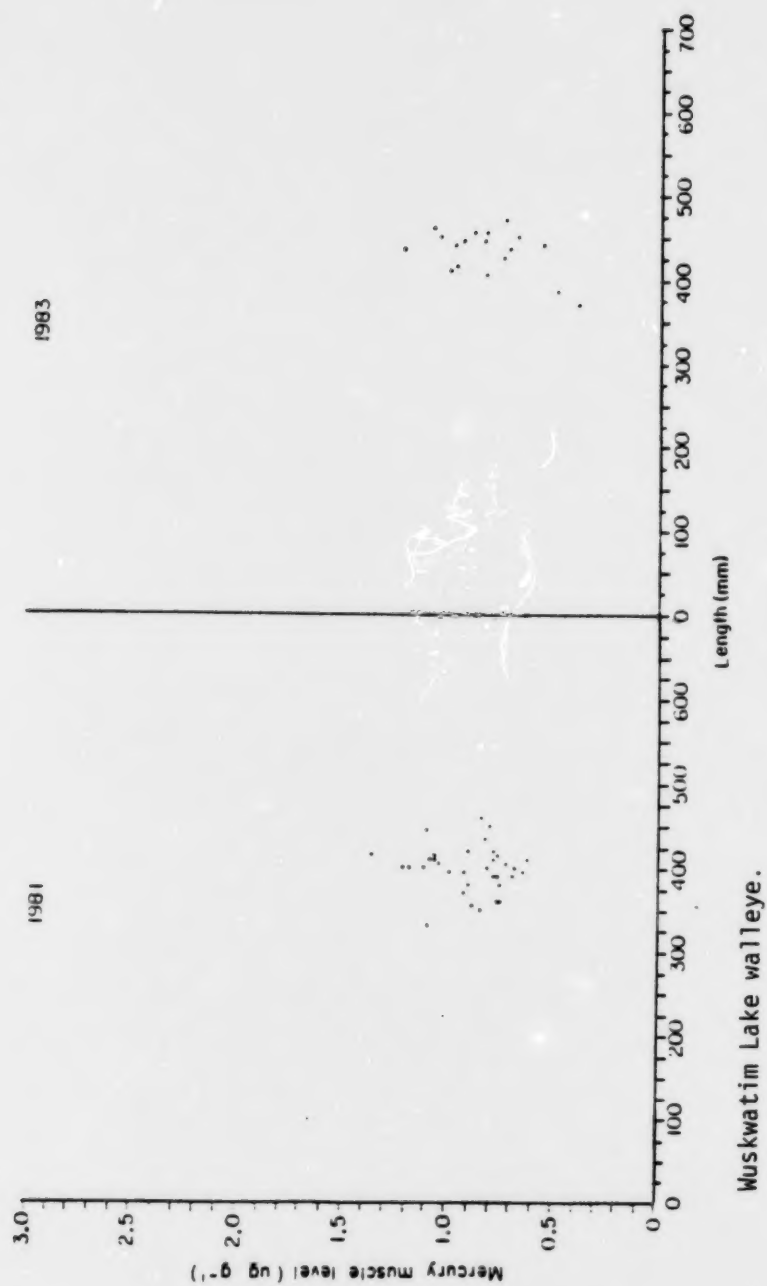
Threepoint Lake walleye.

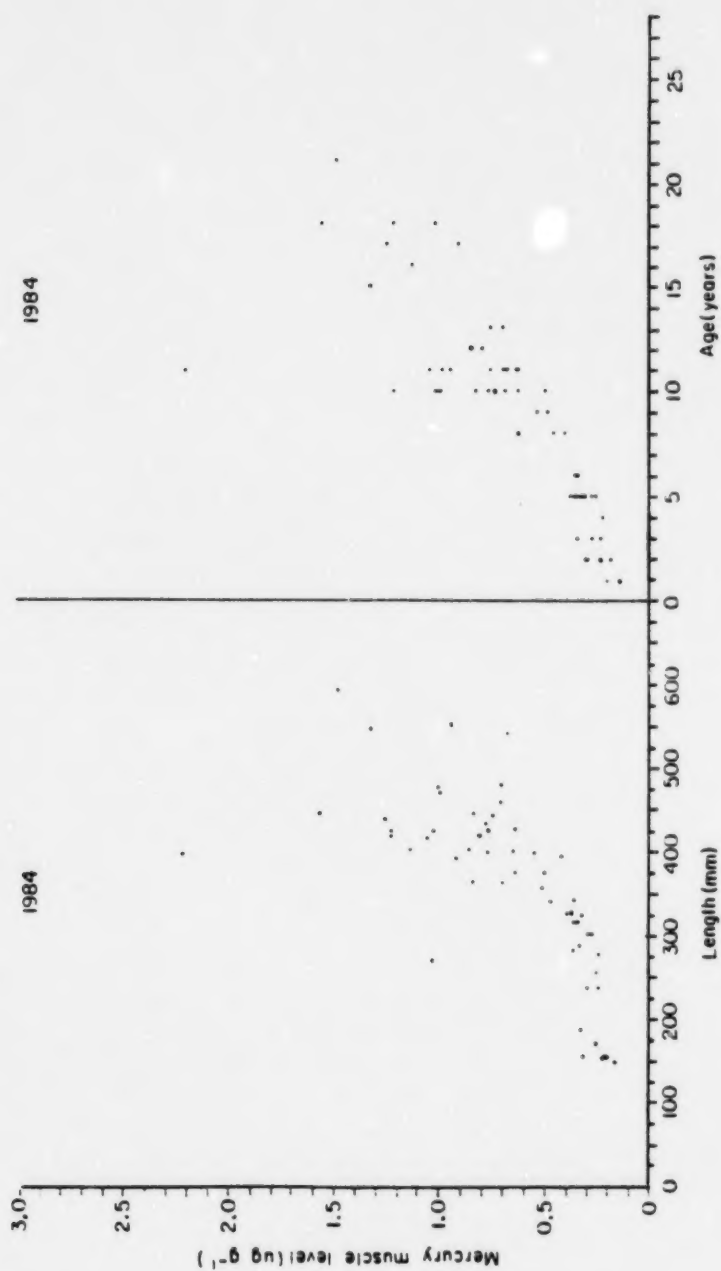


Threepoint Lake walleye.

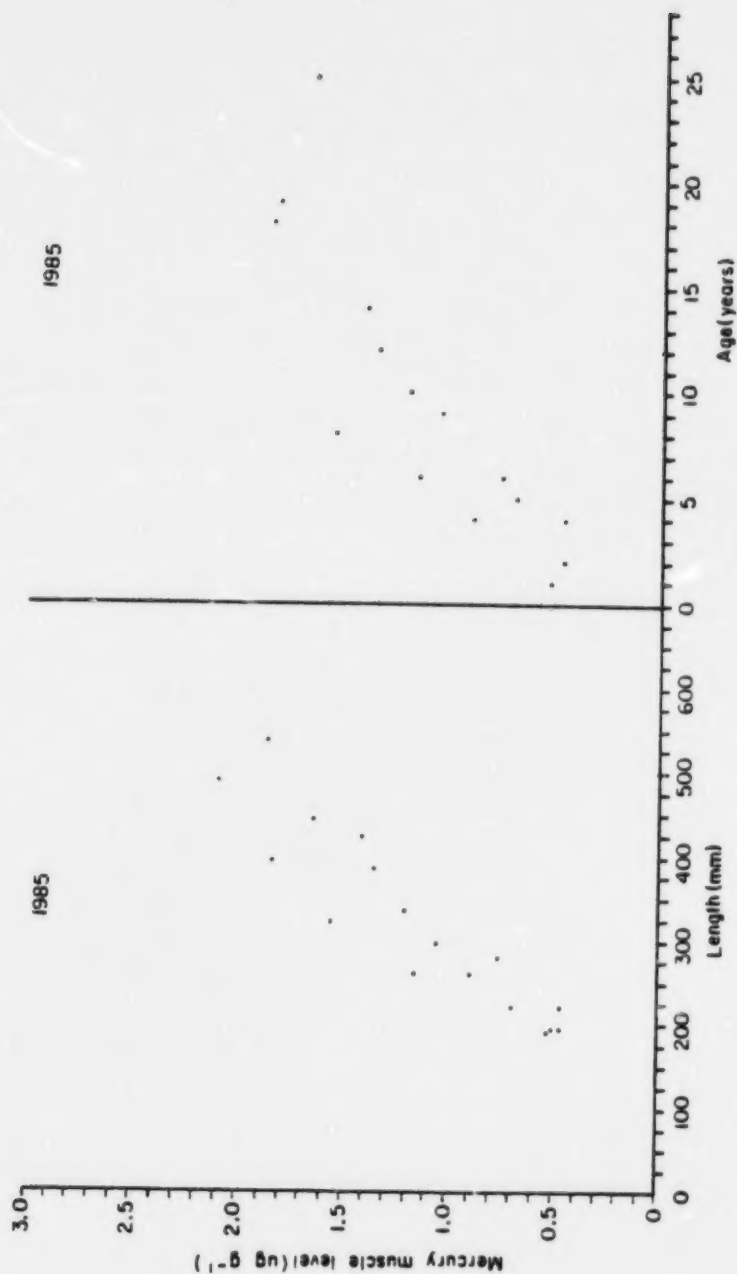


Muskwa Lake walleye.

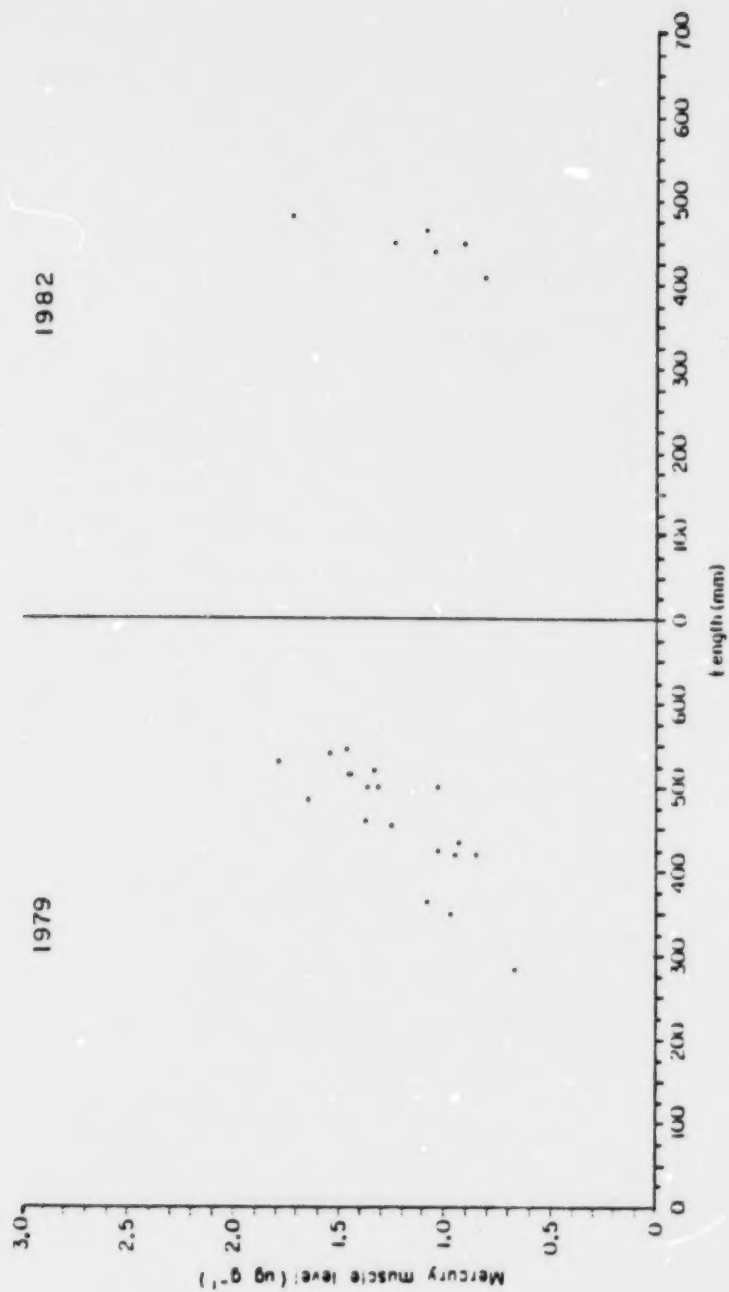




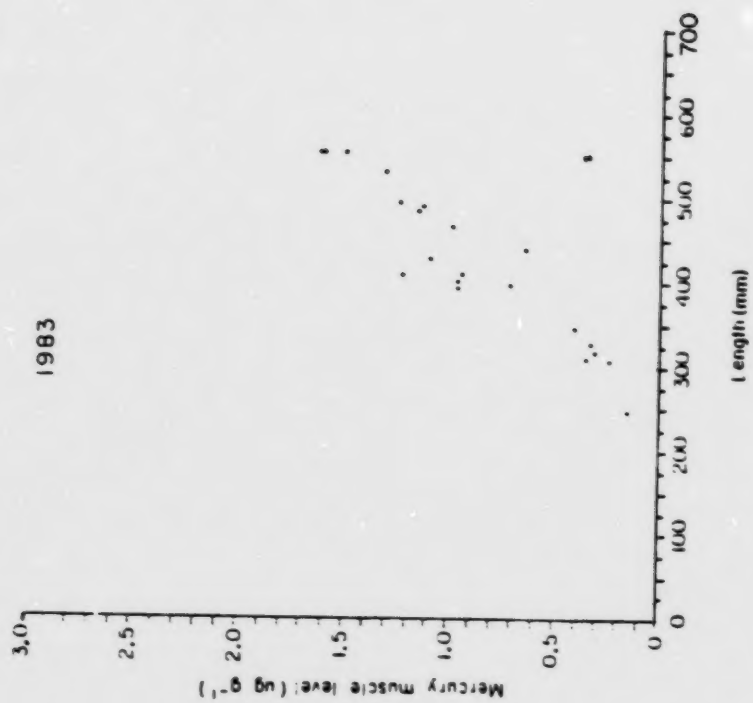
Muskwa Lake walleye.



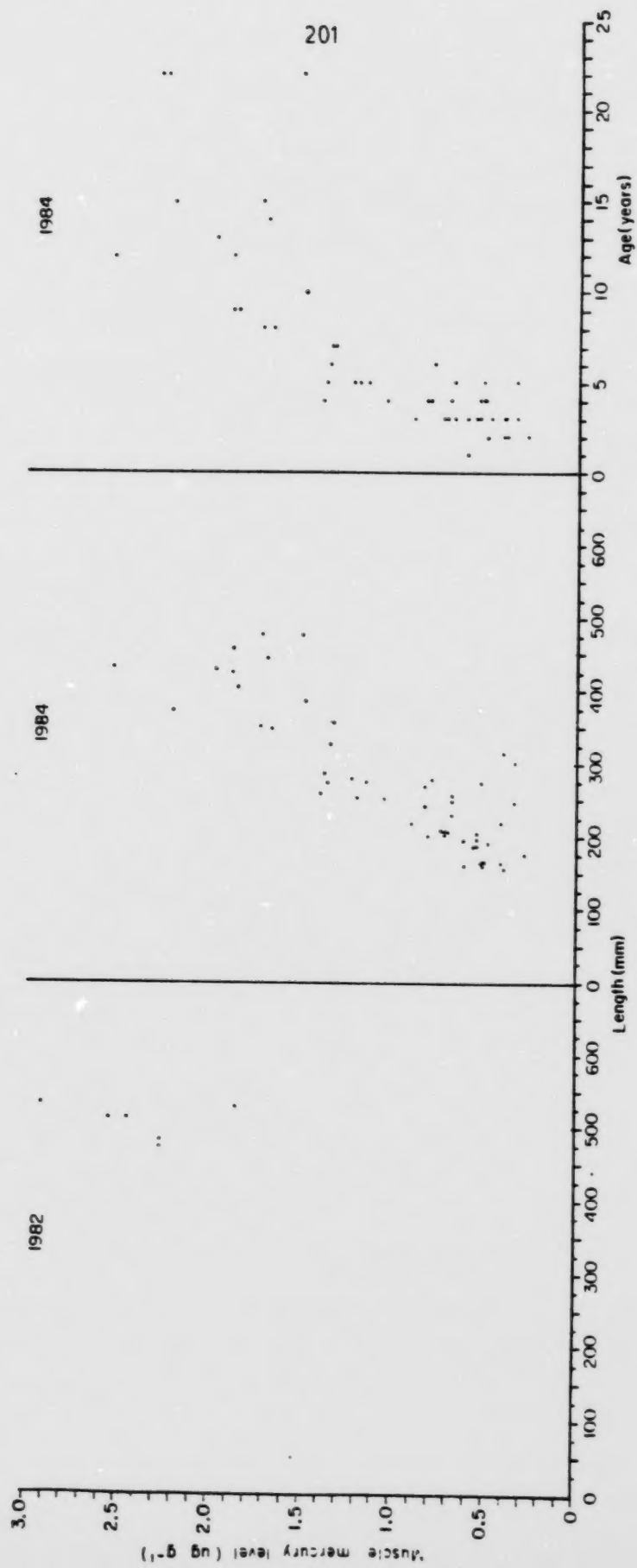
Birch Tree Lake walleye.



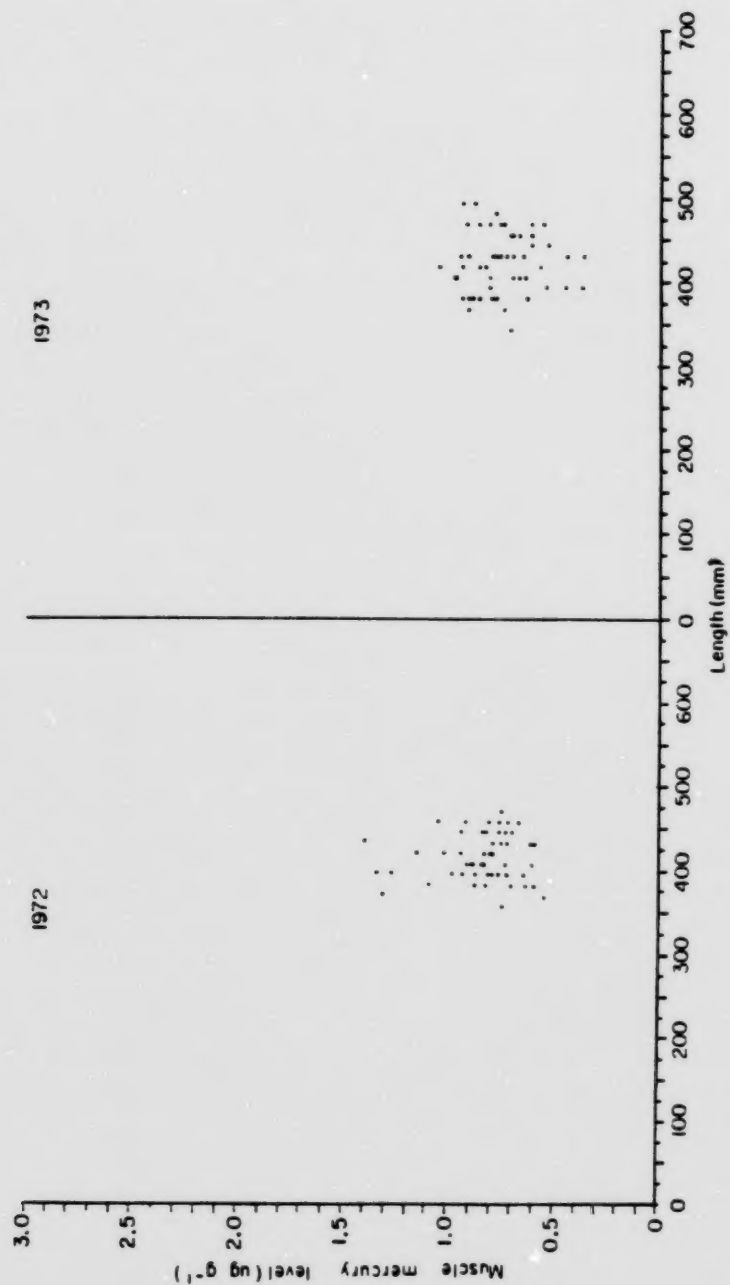
Mystery Lake walleye.



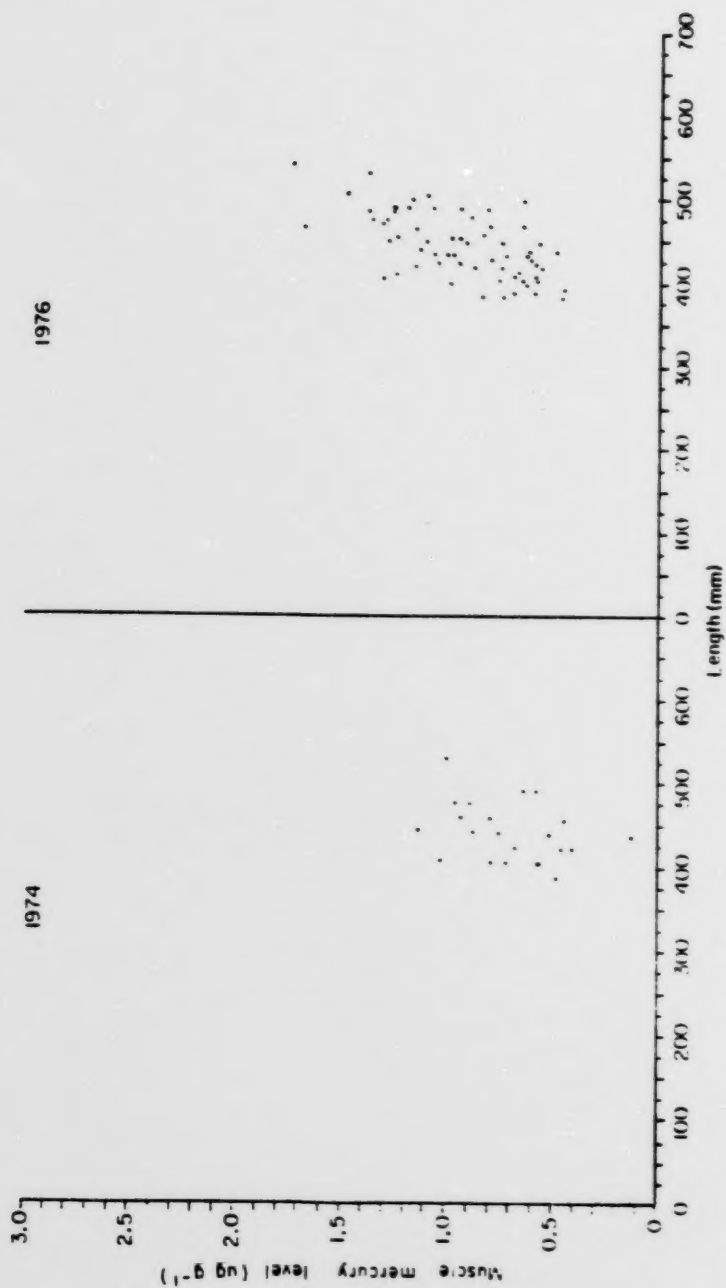
Mystery Lake walleye.



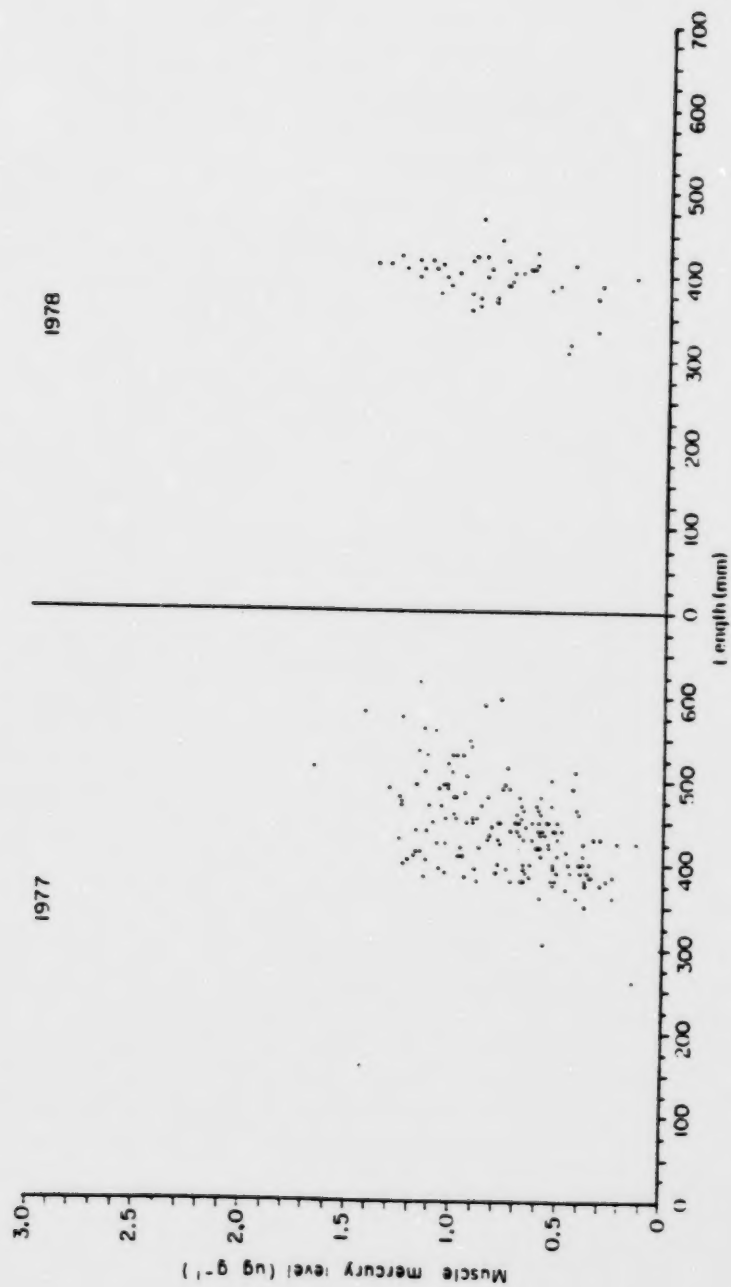
Apussigamasi Lake walleye.



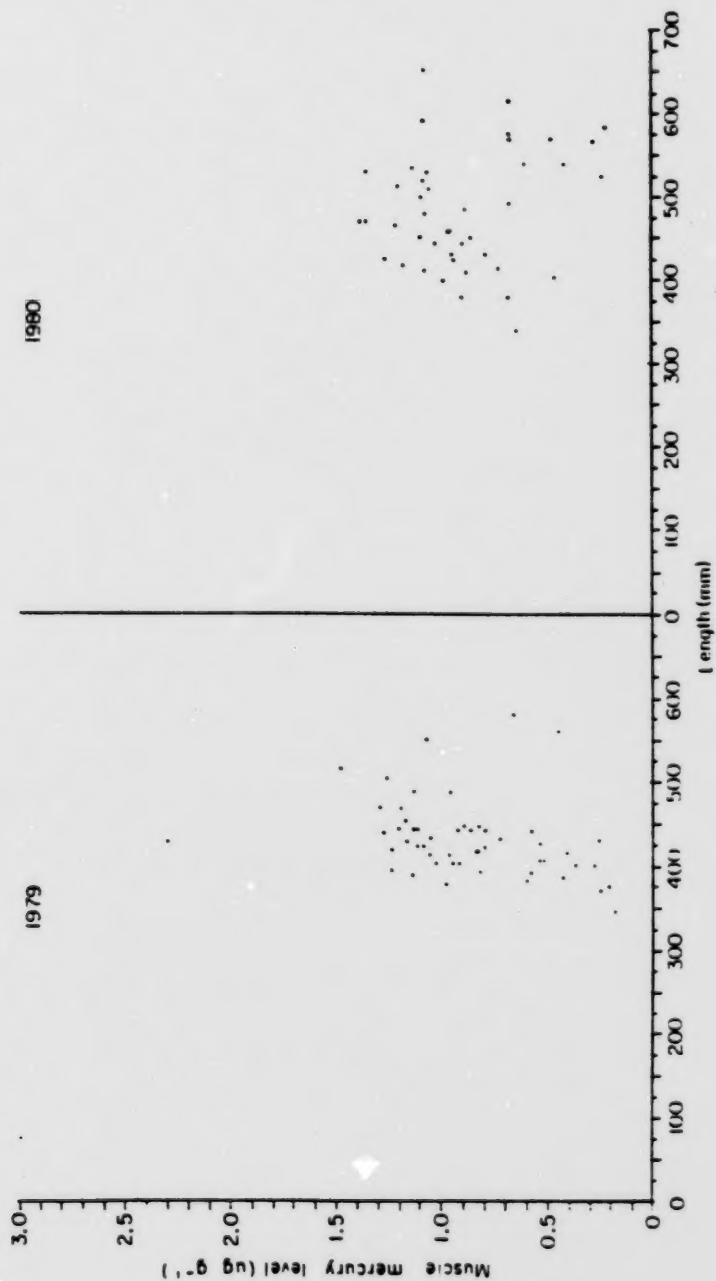
Sipiwesk Lake walleye.



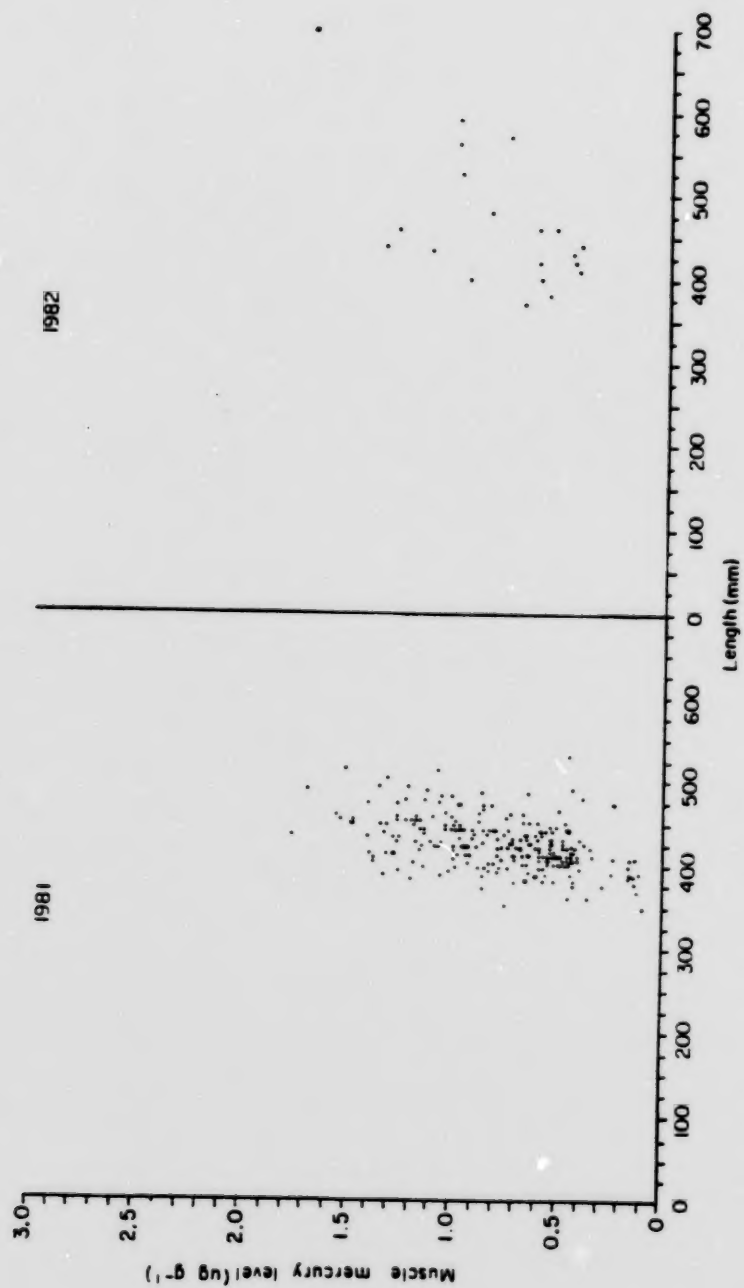
Sipiwesk Lake walleye.



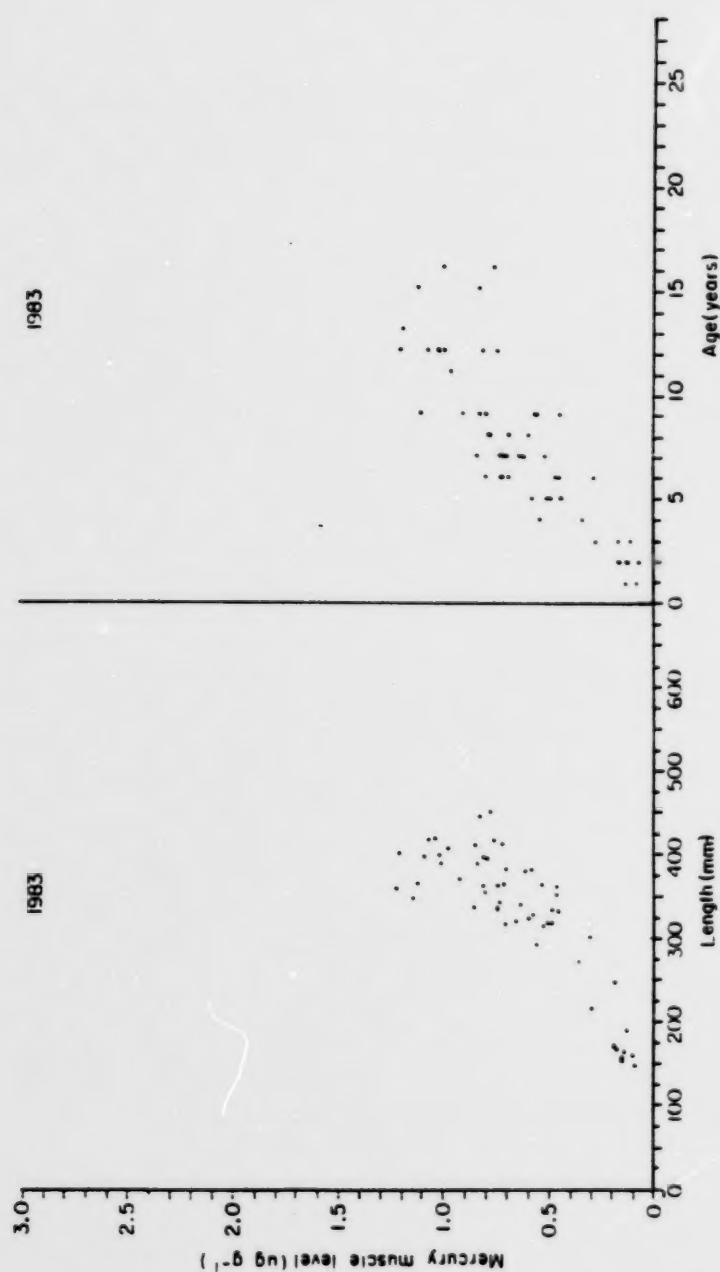
Sipiwek Lake walleye.



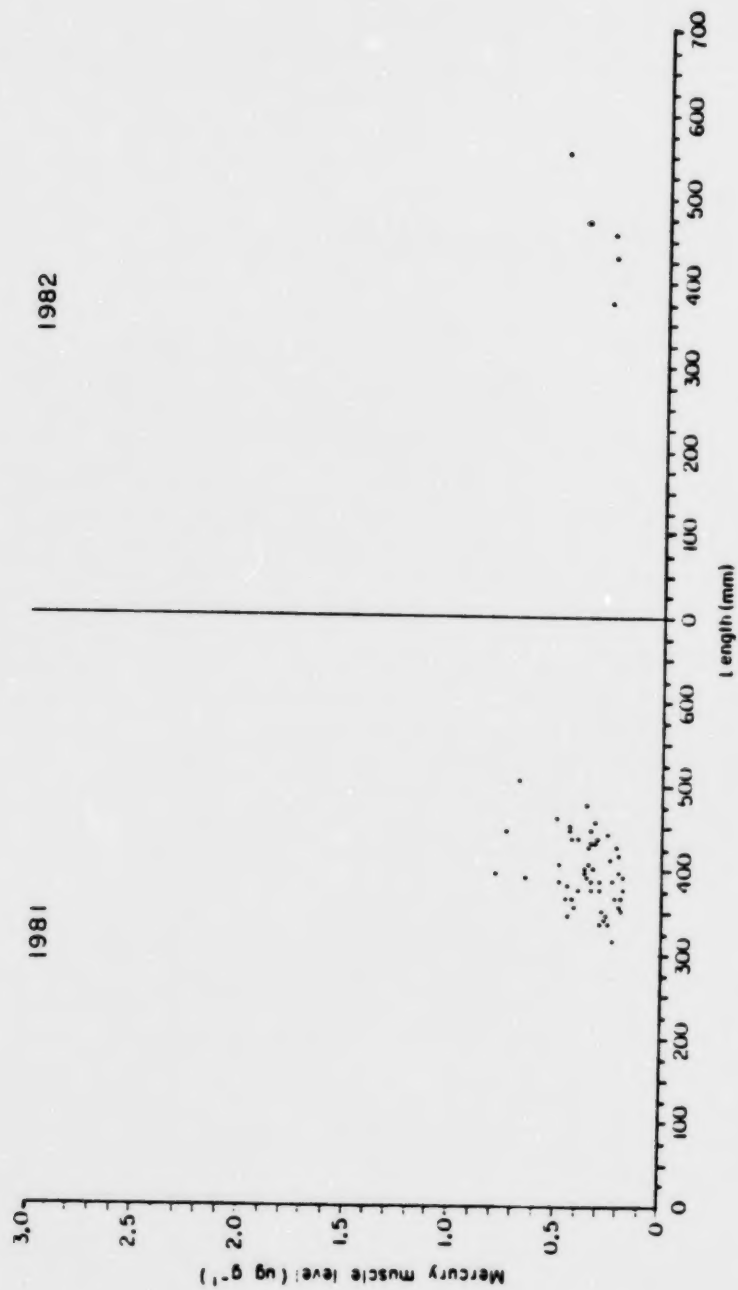
Sipiwesk Lake walleye.



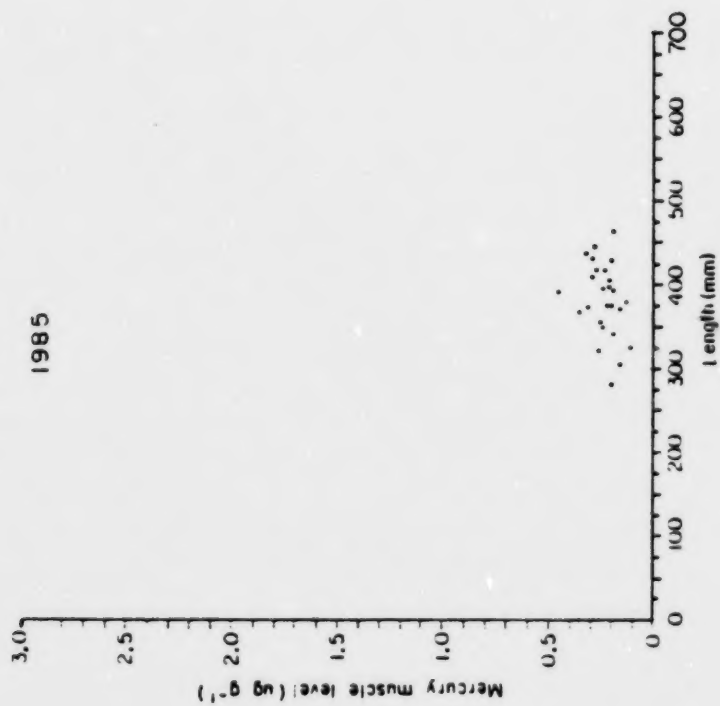
Sipiwesk Lake walleye.



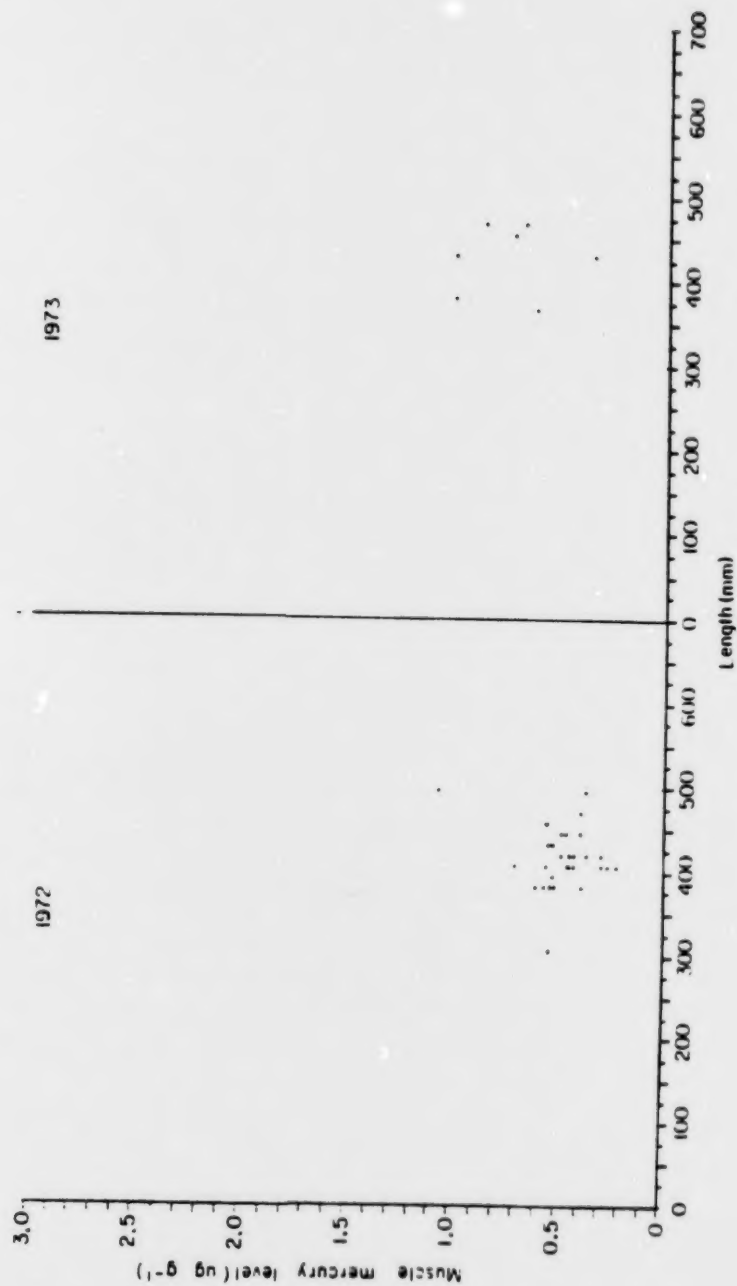
Sipiwesk Lake walleye.



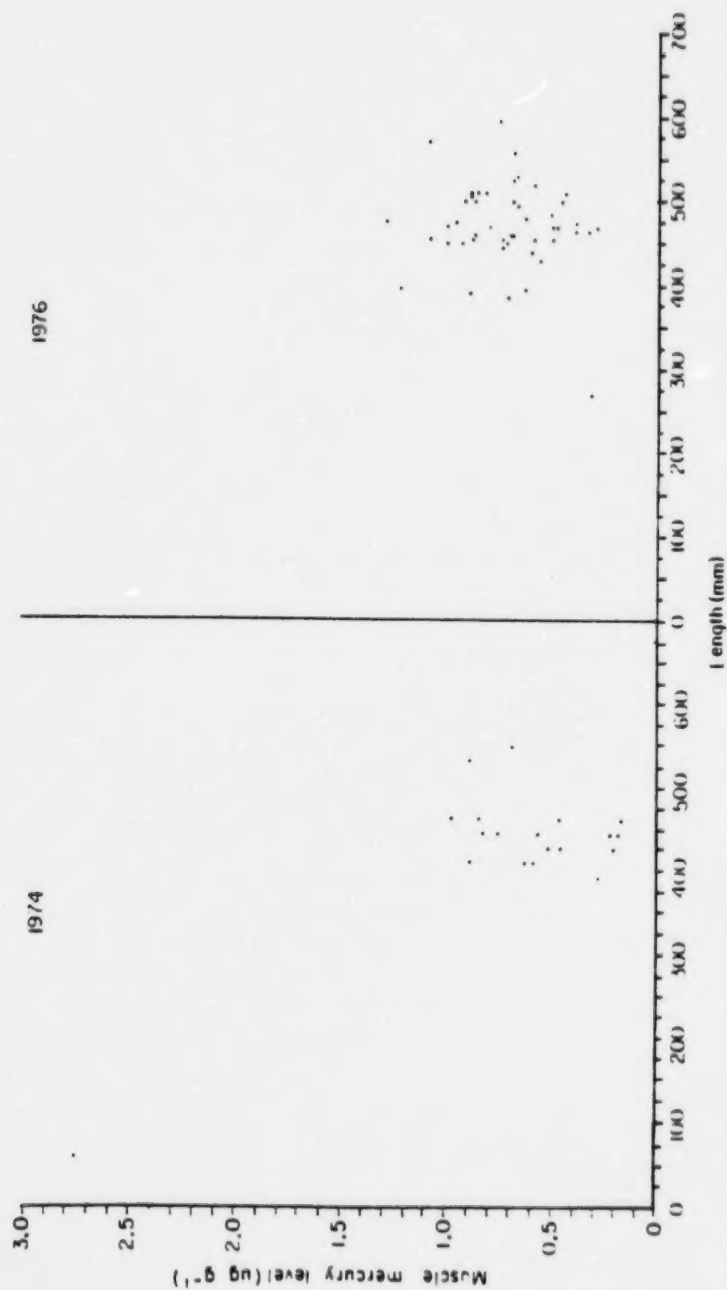
Assean Lake walleye.



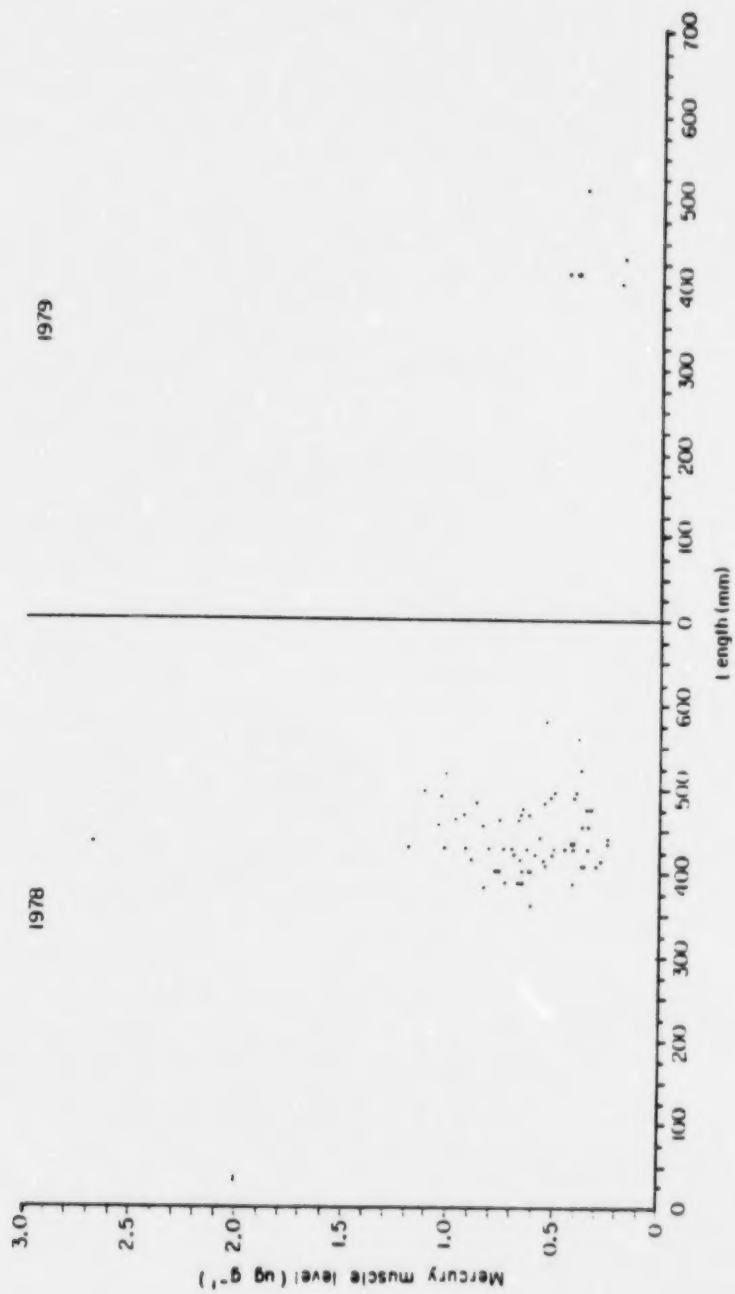
Assean Lake walleye.



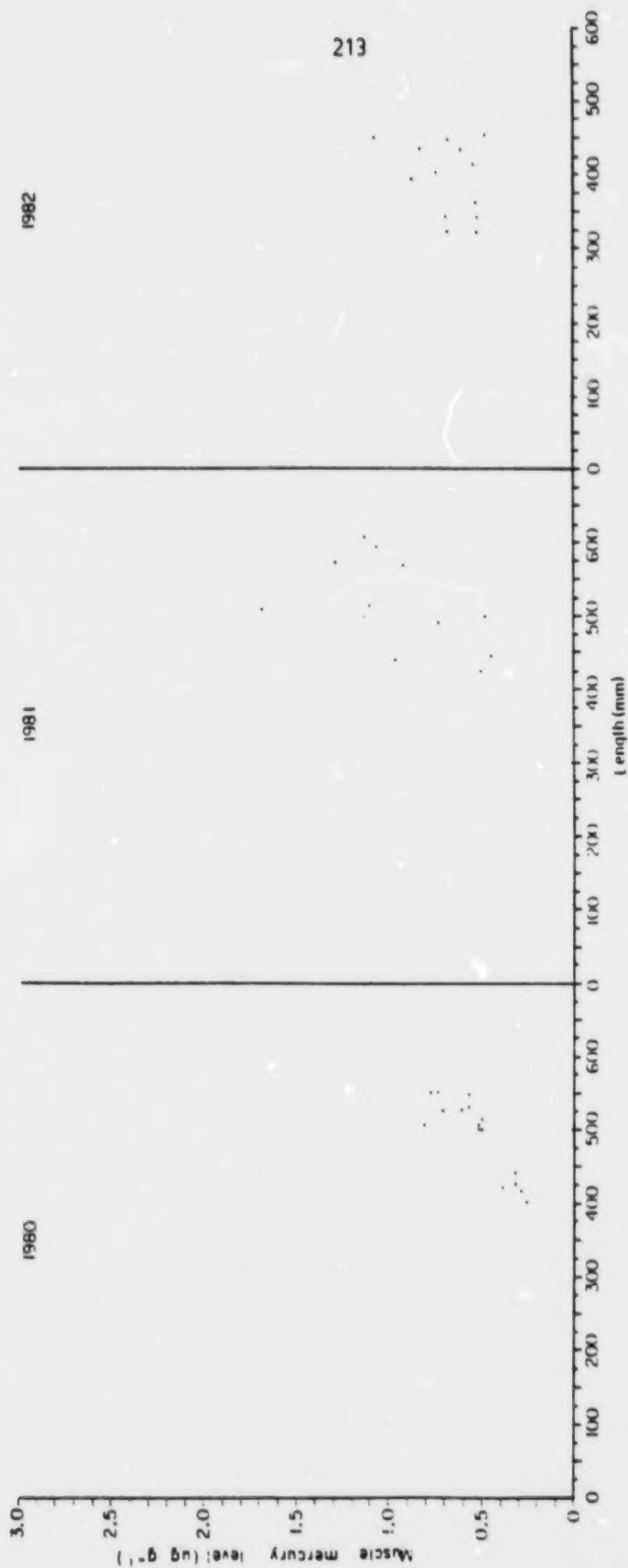
Split Lake walleye.



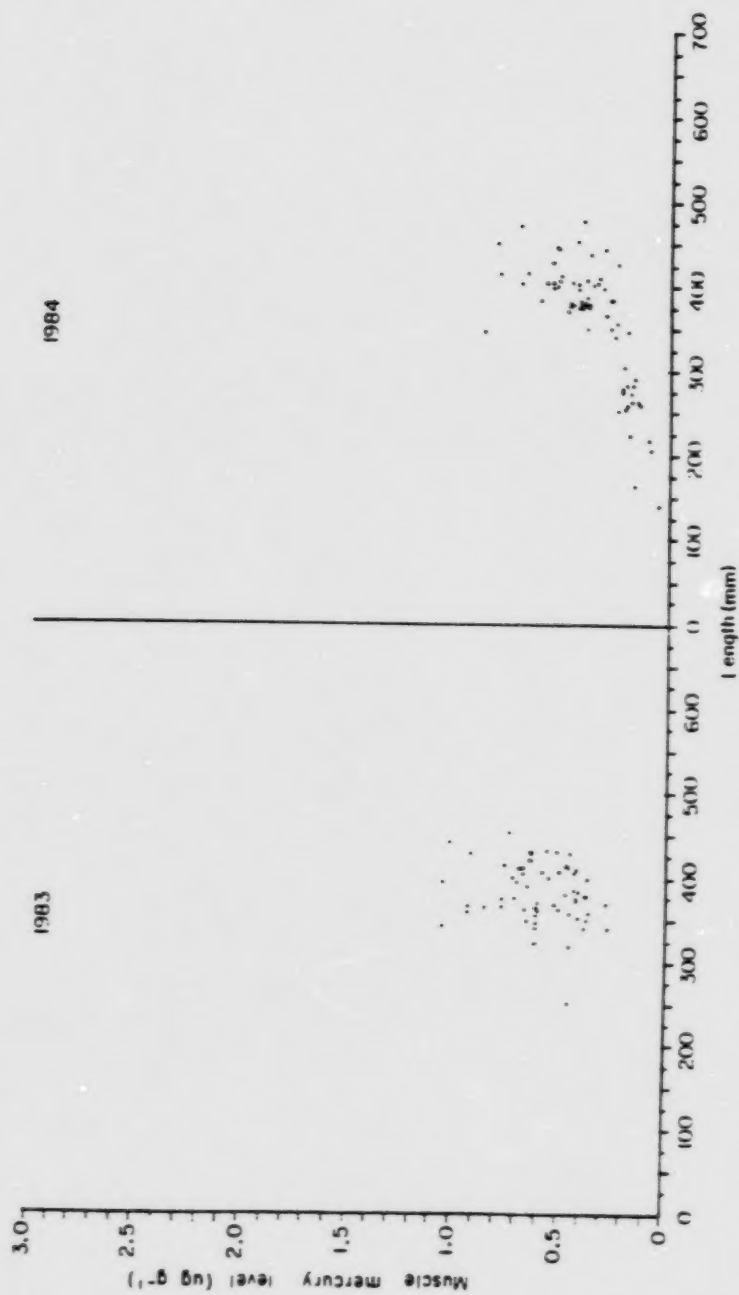
Split Lake walleye.



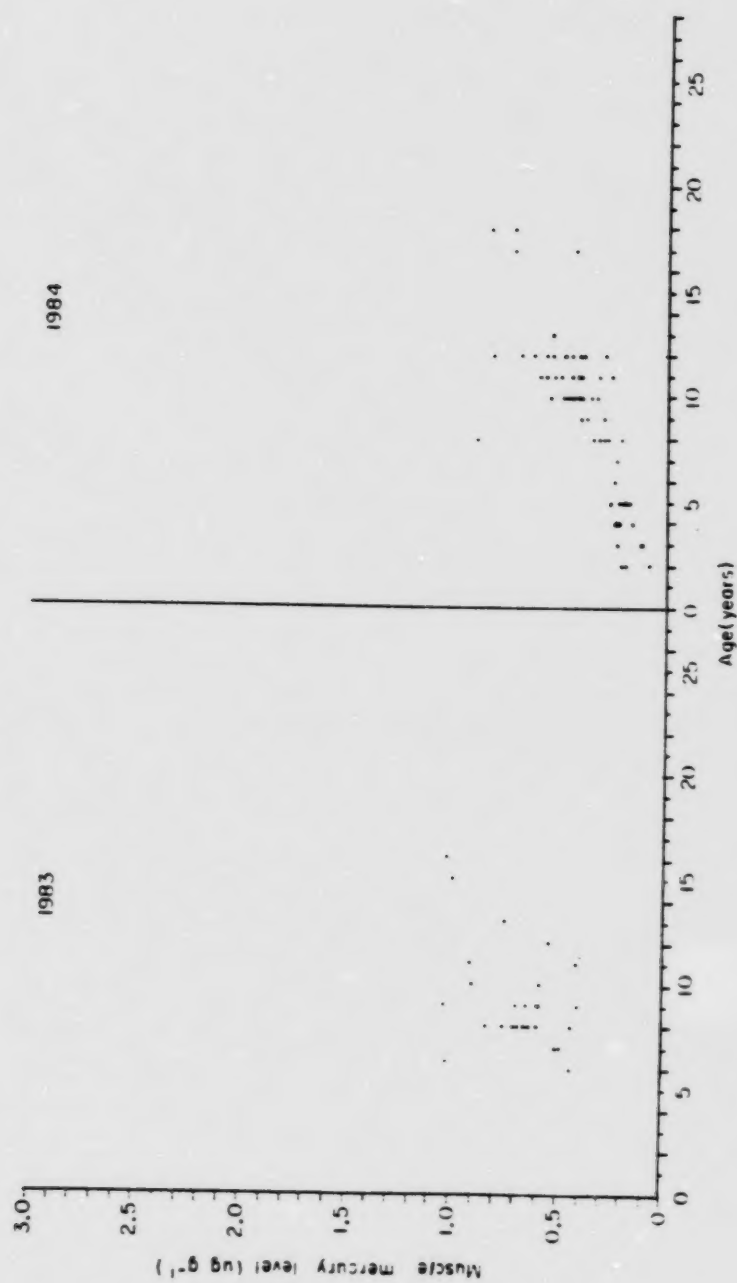
Split Lake walleye.



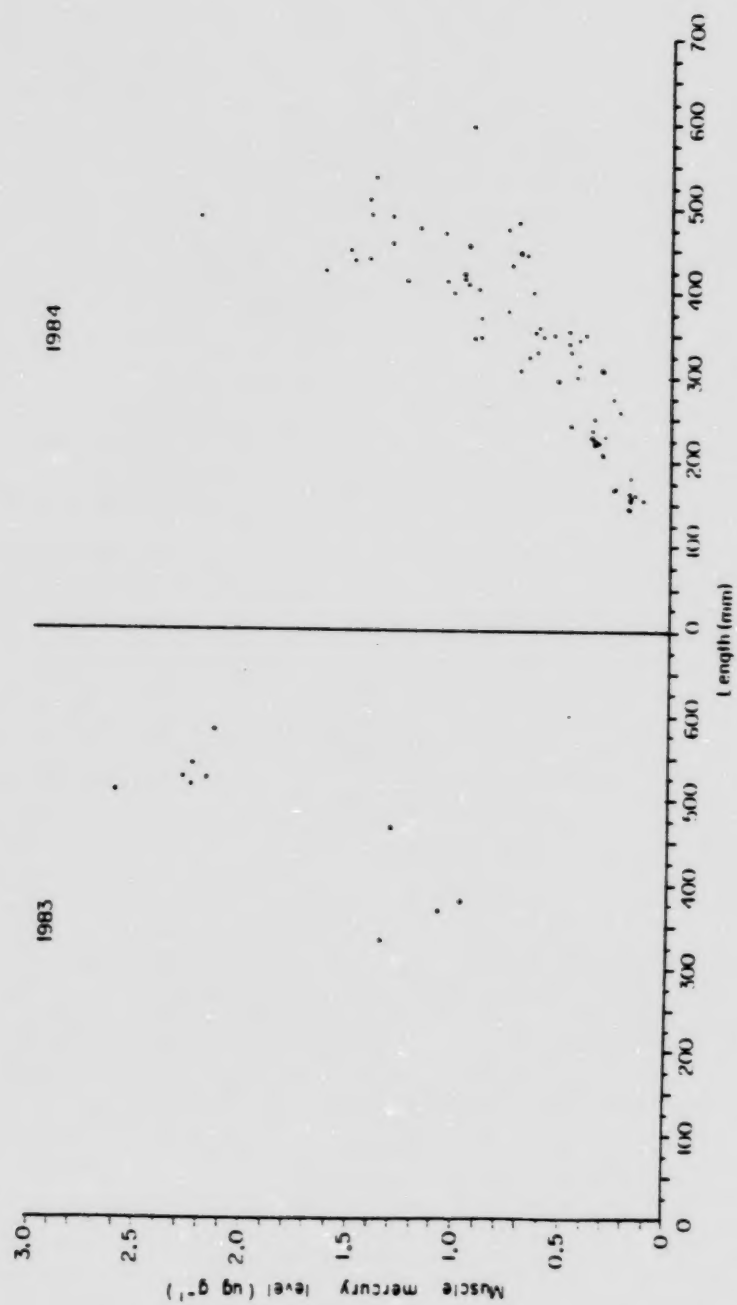
Split Lake walleye.



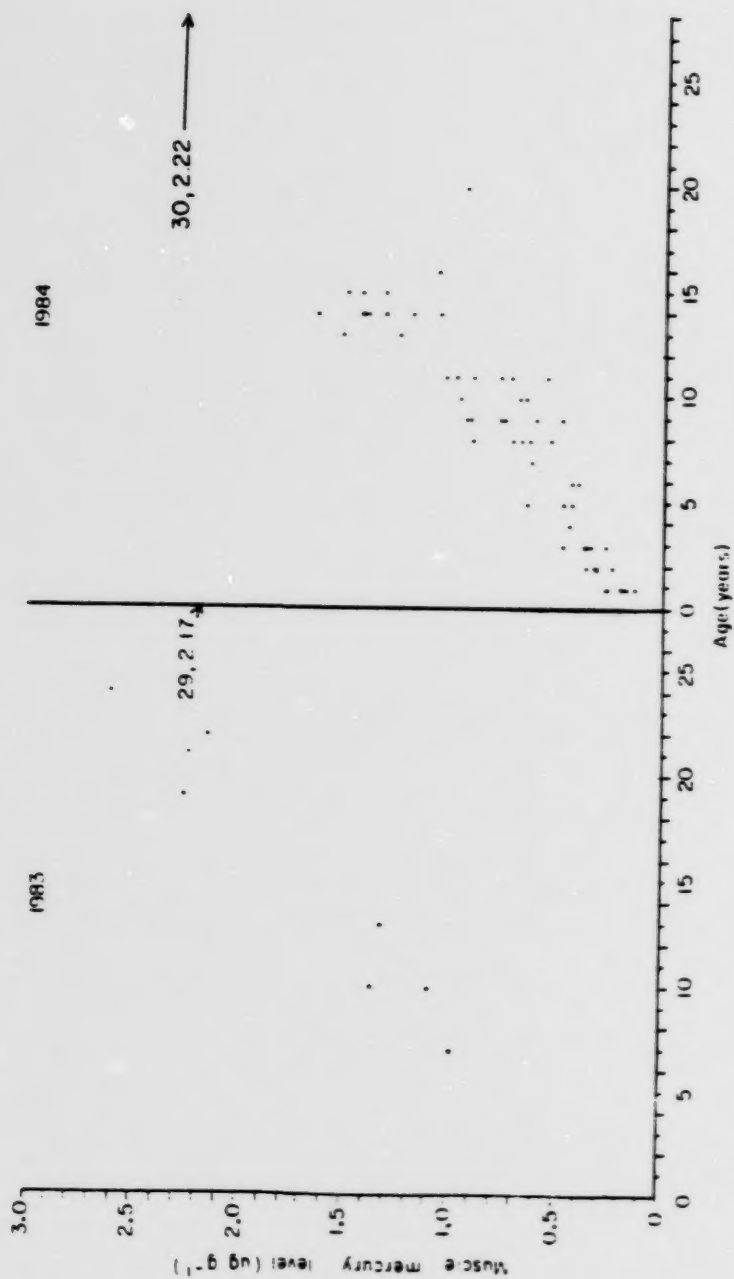
Split Lake walleye.



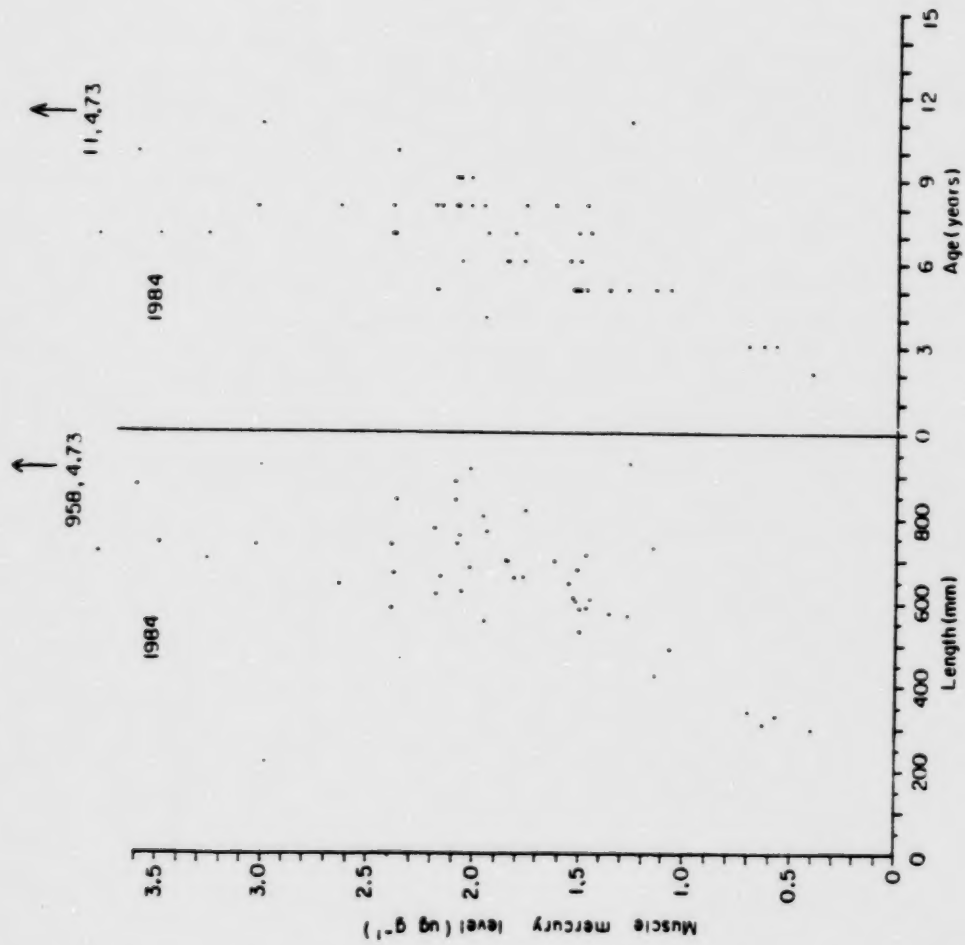
Split Lake walleye.



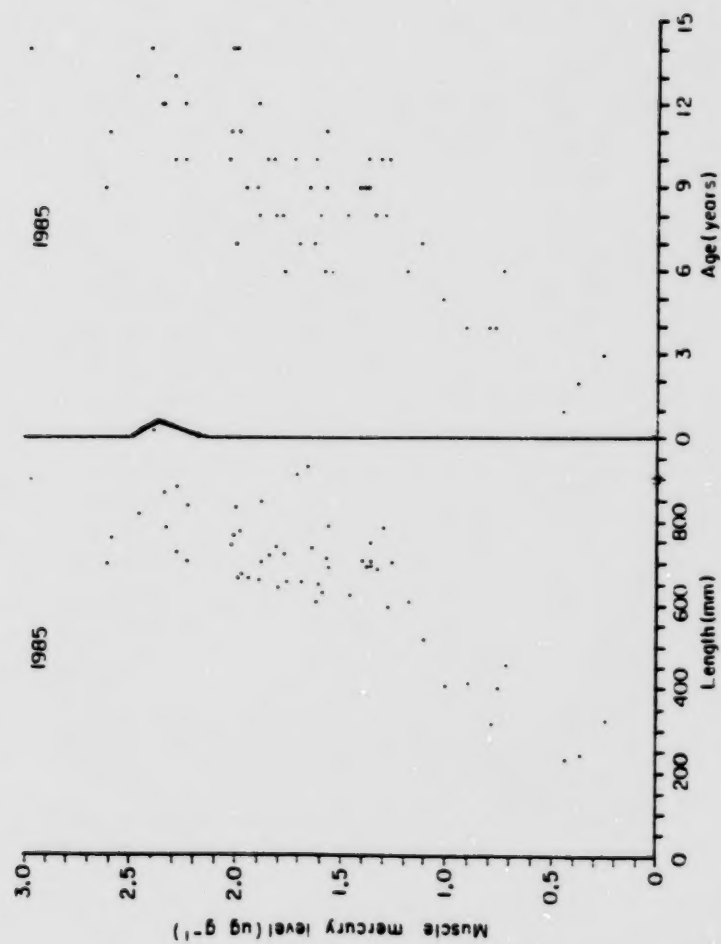
Stephens Lake walleye.



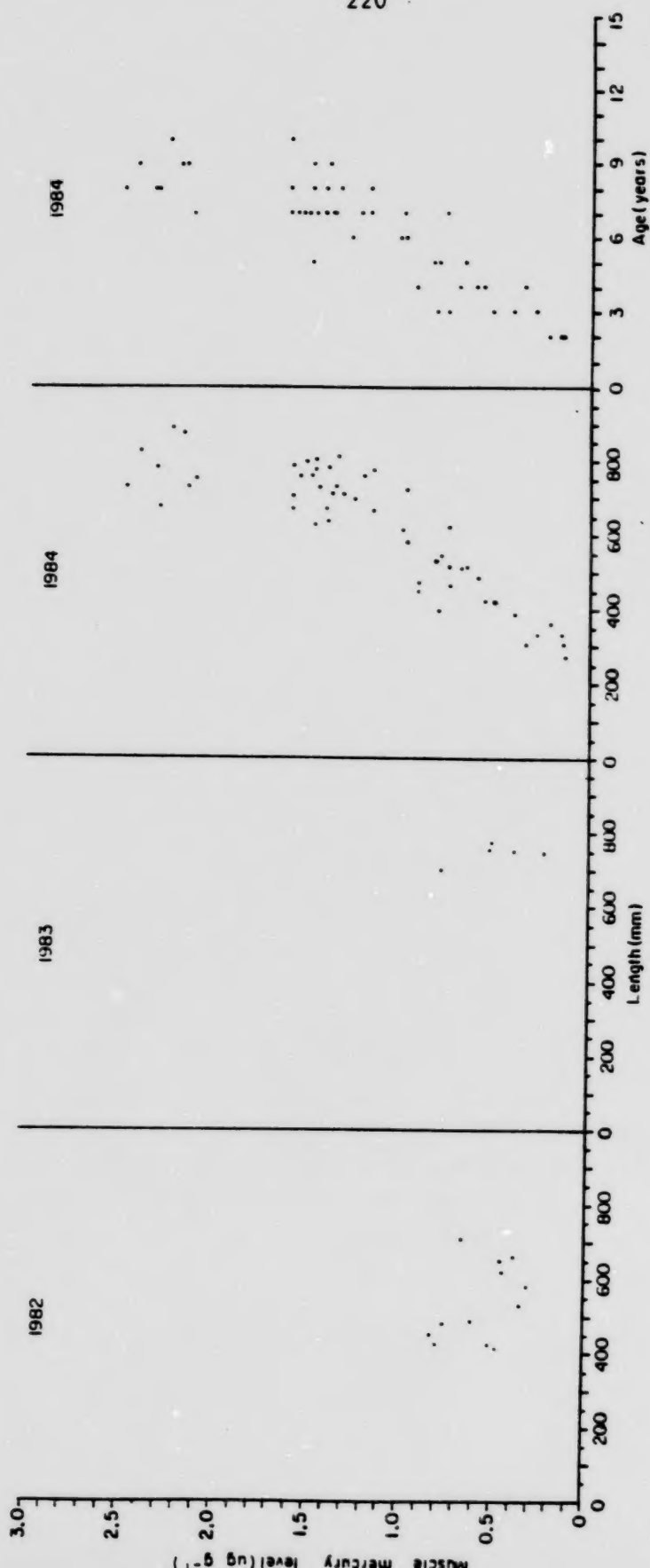
Stephens Lake walleye.



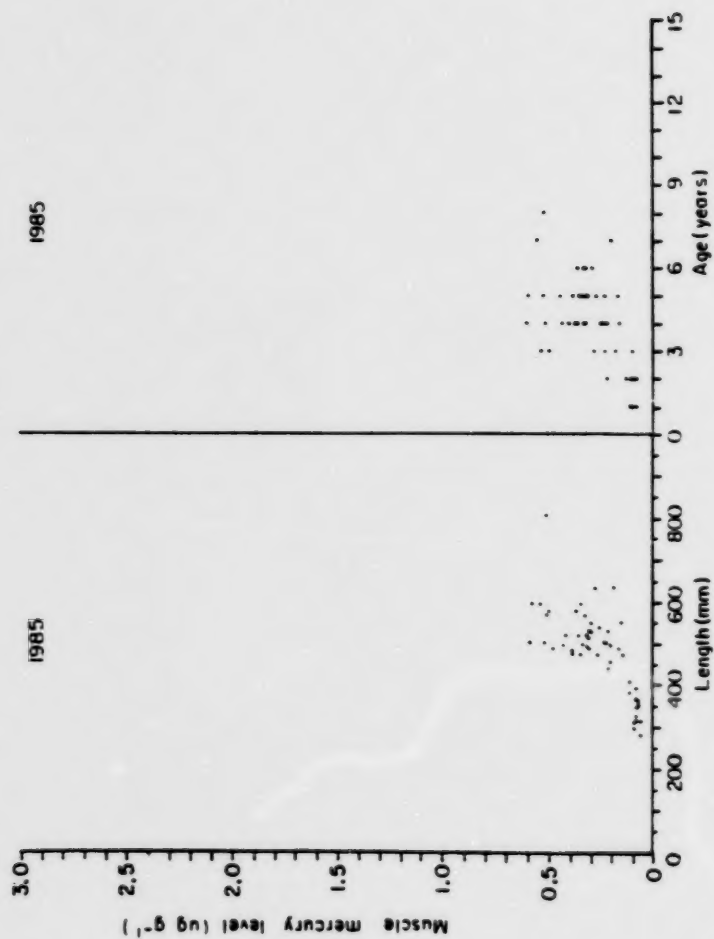
Karsakw'igamak Lake northern pike.



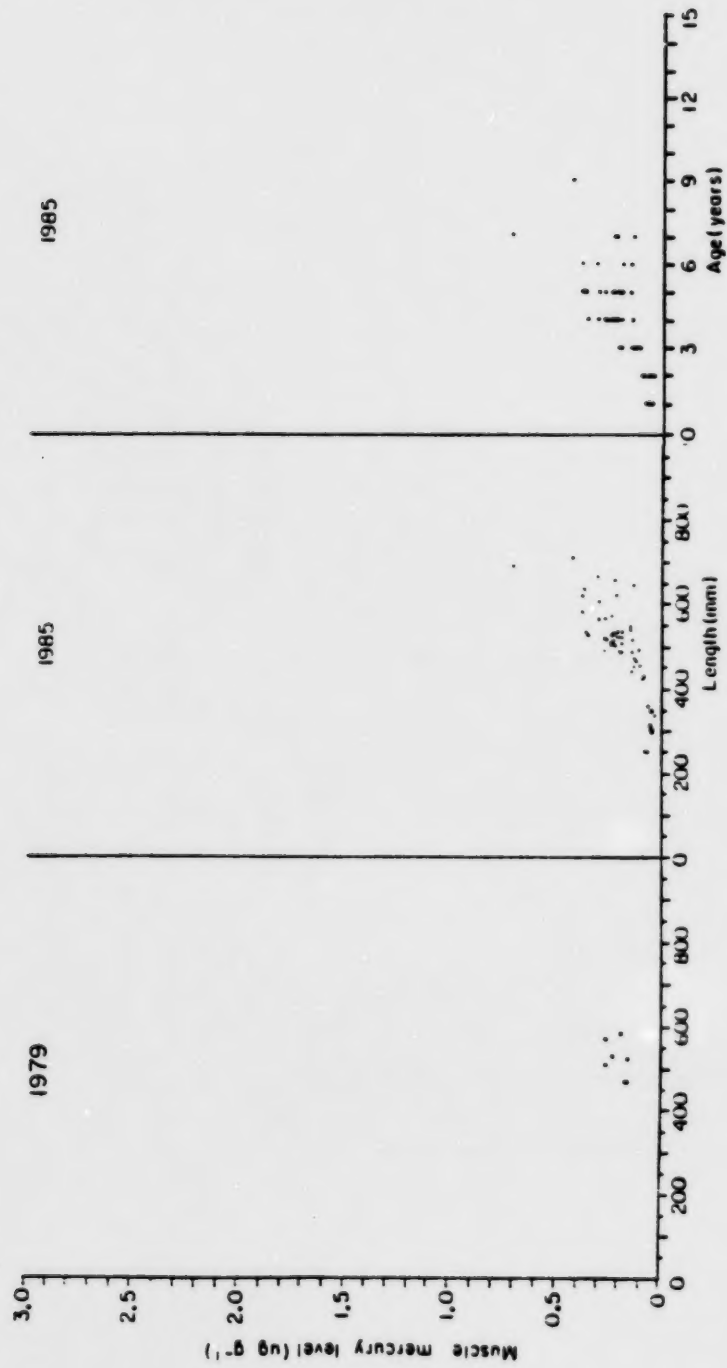
Pemichigamau Lake northern pike.



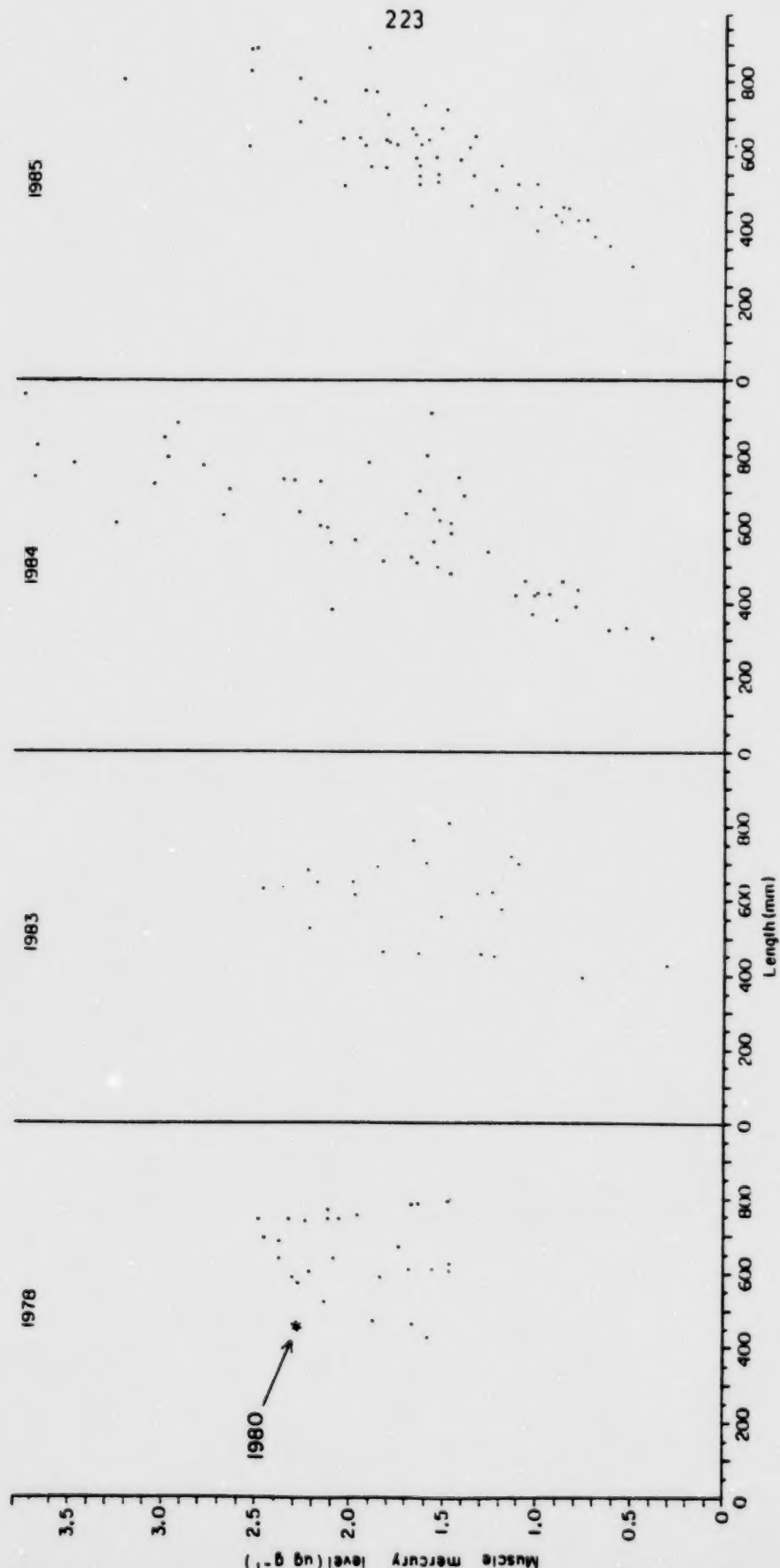
West & Central Mynarski Lake northern pike.



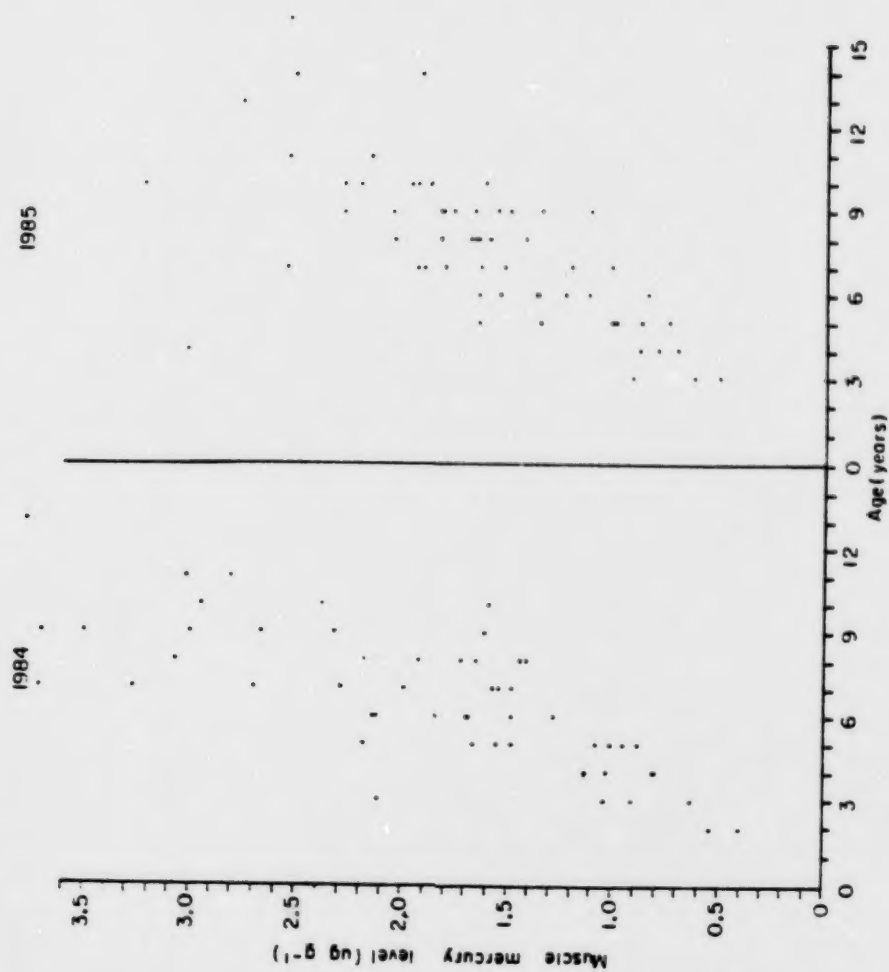
Costello Lake northern pike.



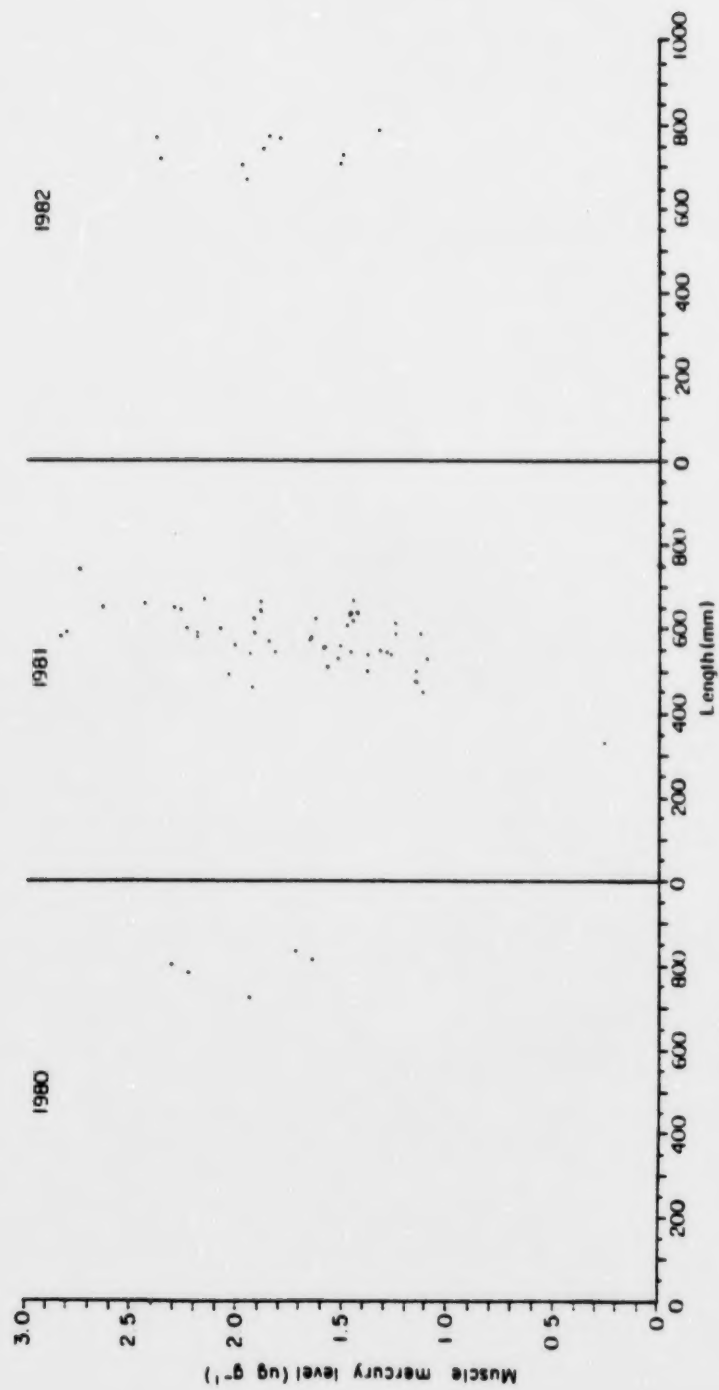
Suwannee Lake northern pike.



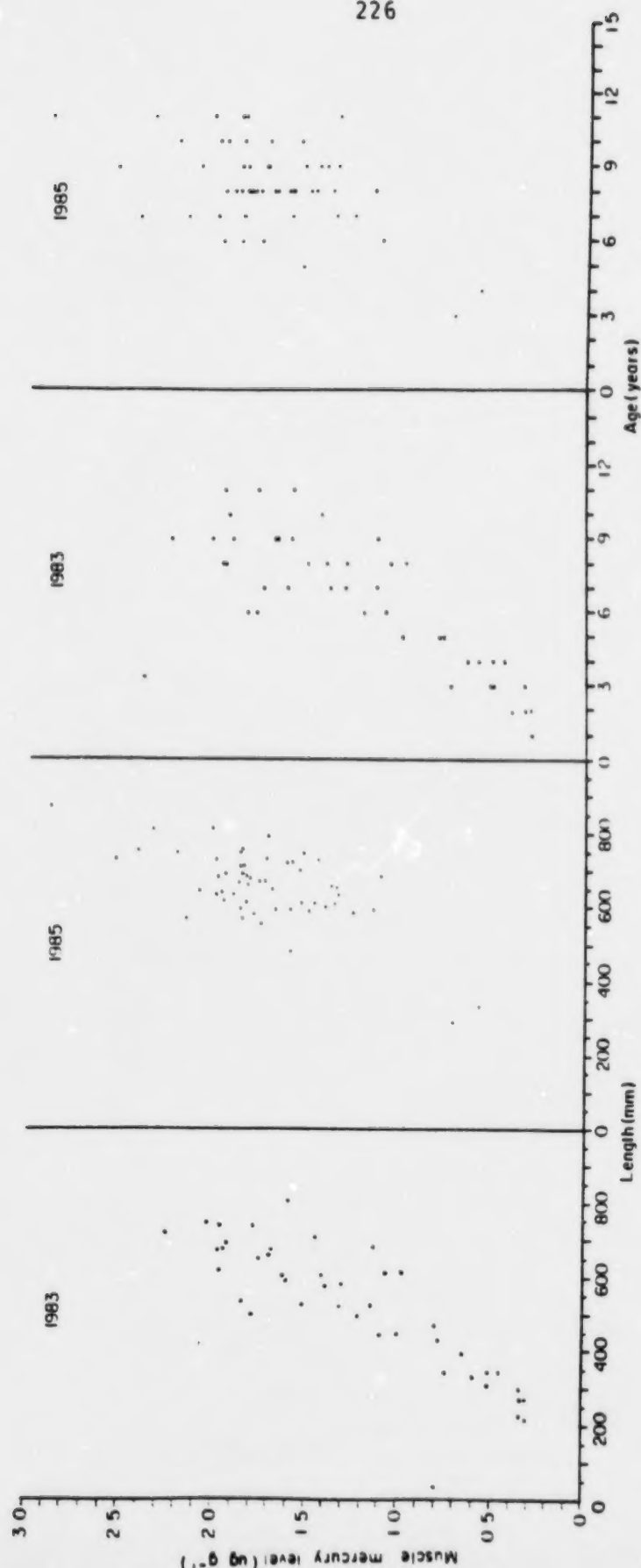
Rat Lake northern pike.



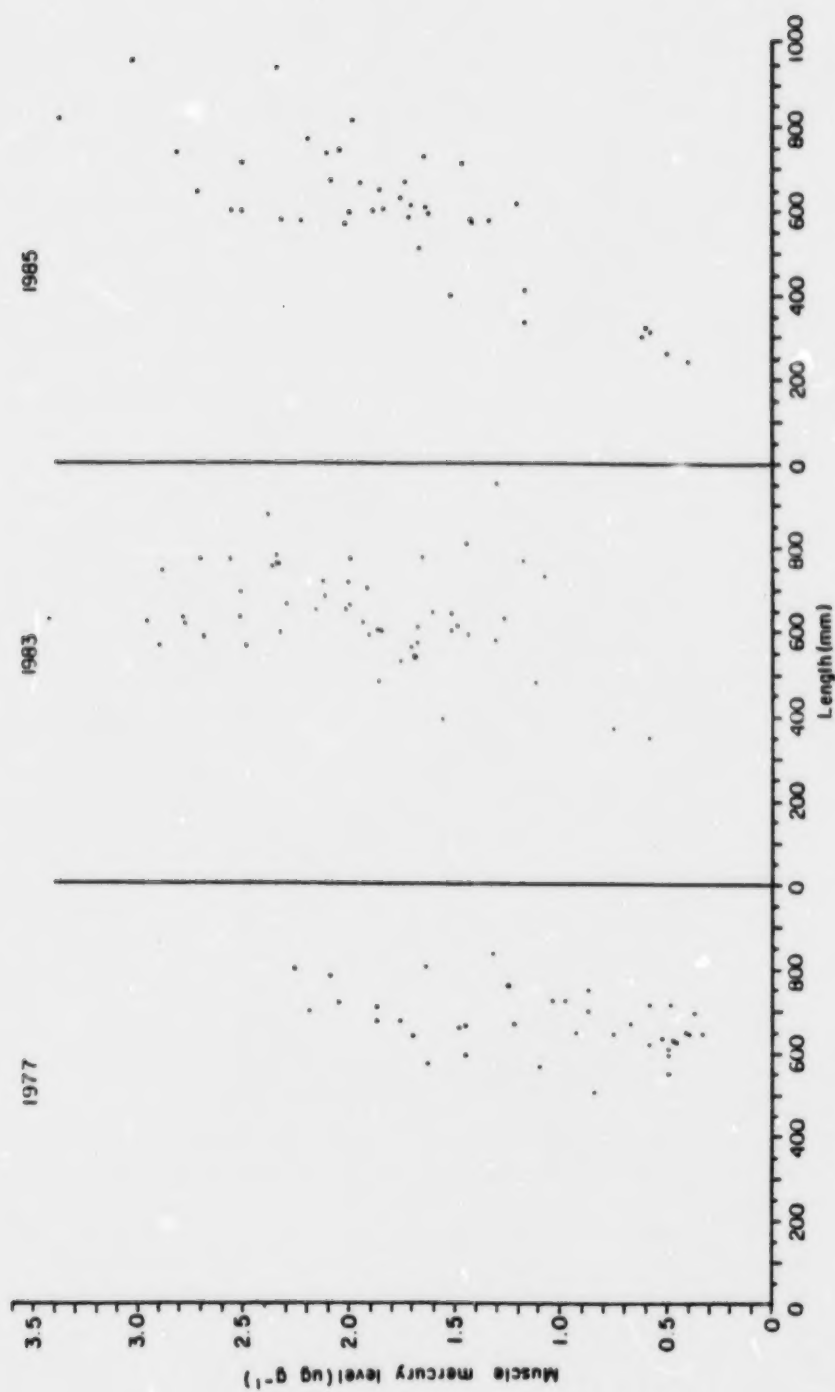
Rat Lake northern pike.



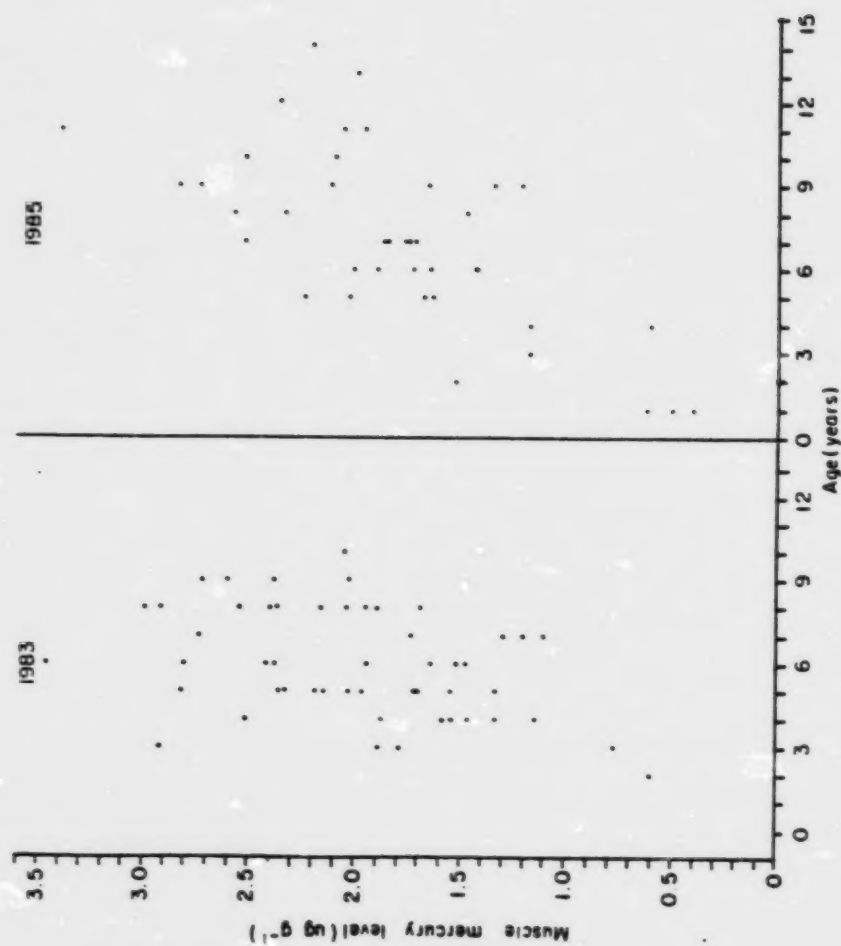
Notigi Lake northern pike.



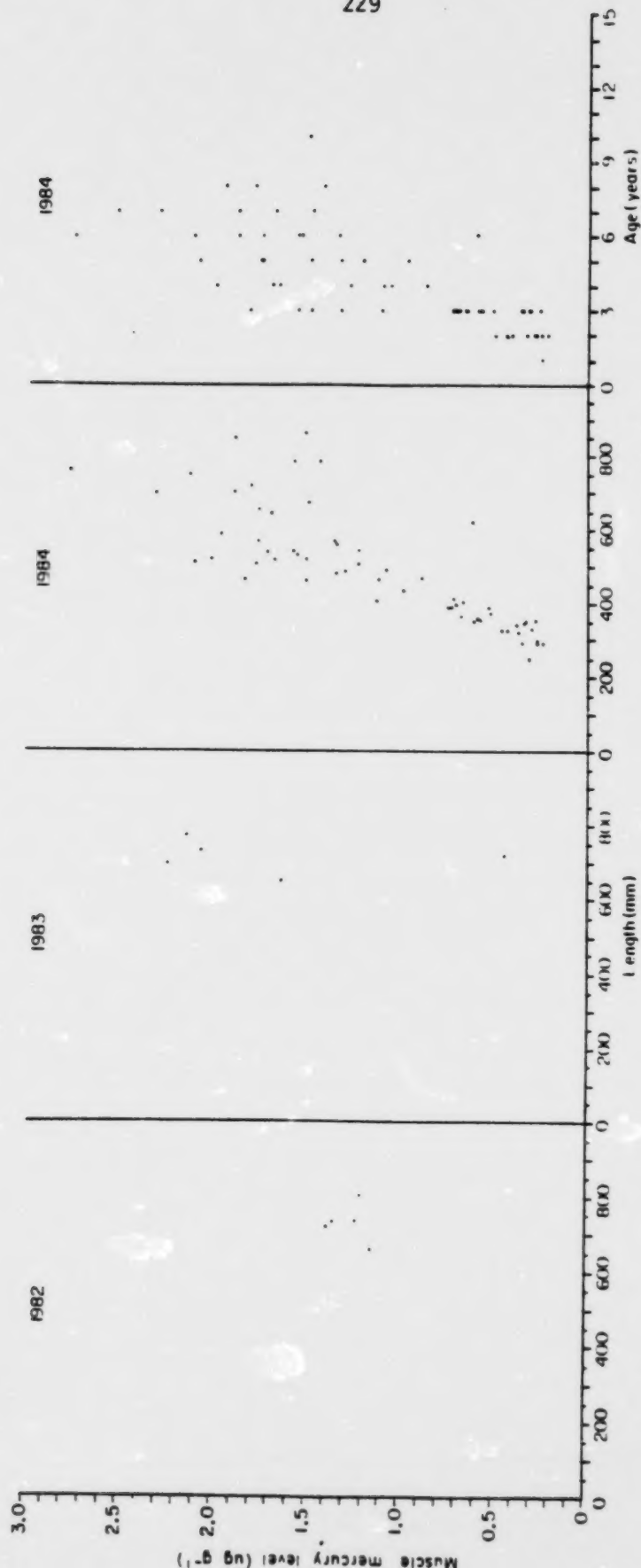
Notigi Lake northern pike.



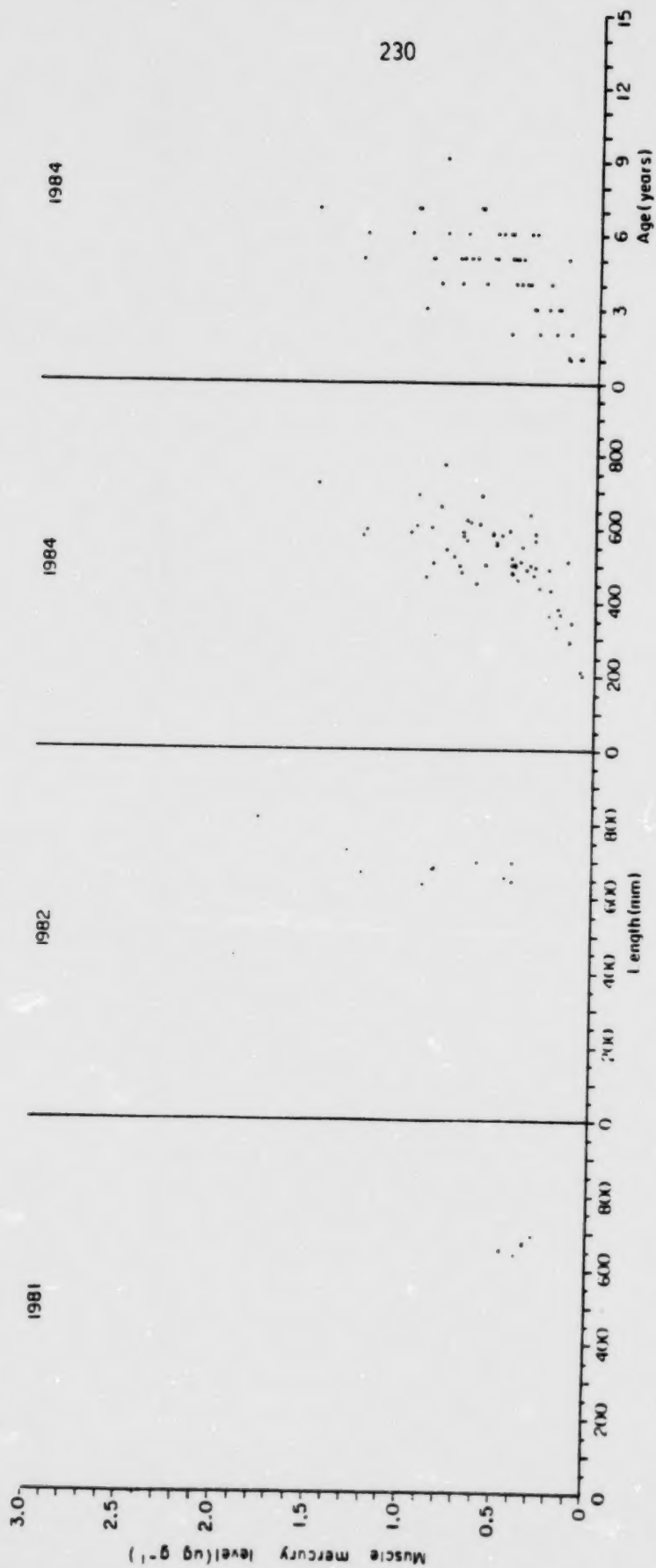
Wapitu Lake northern pike.



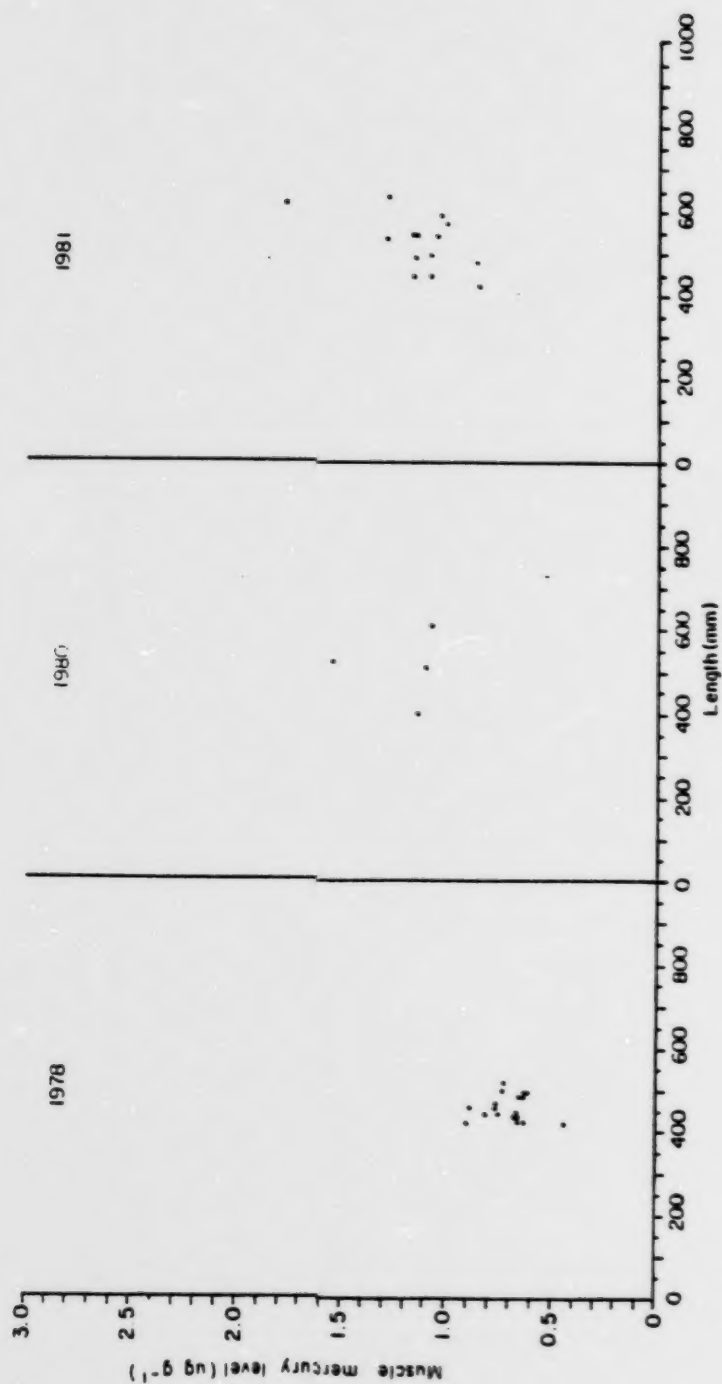
Wapitu Lake northern pike.



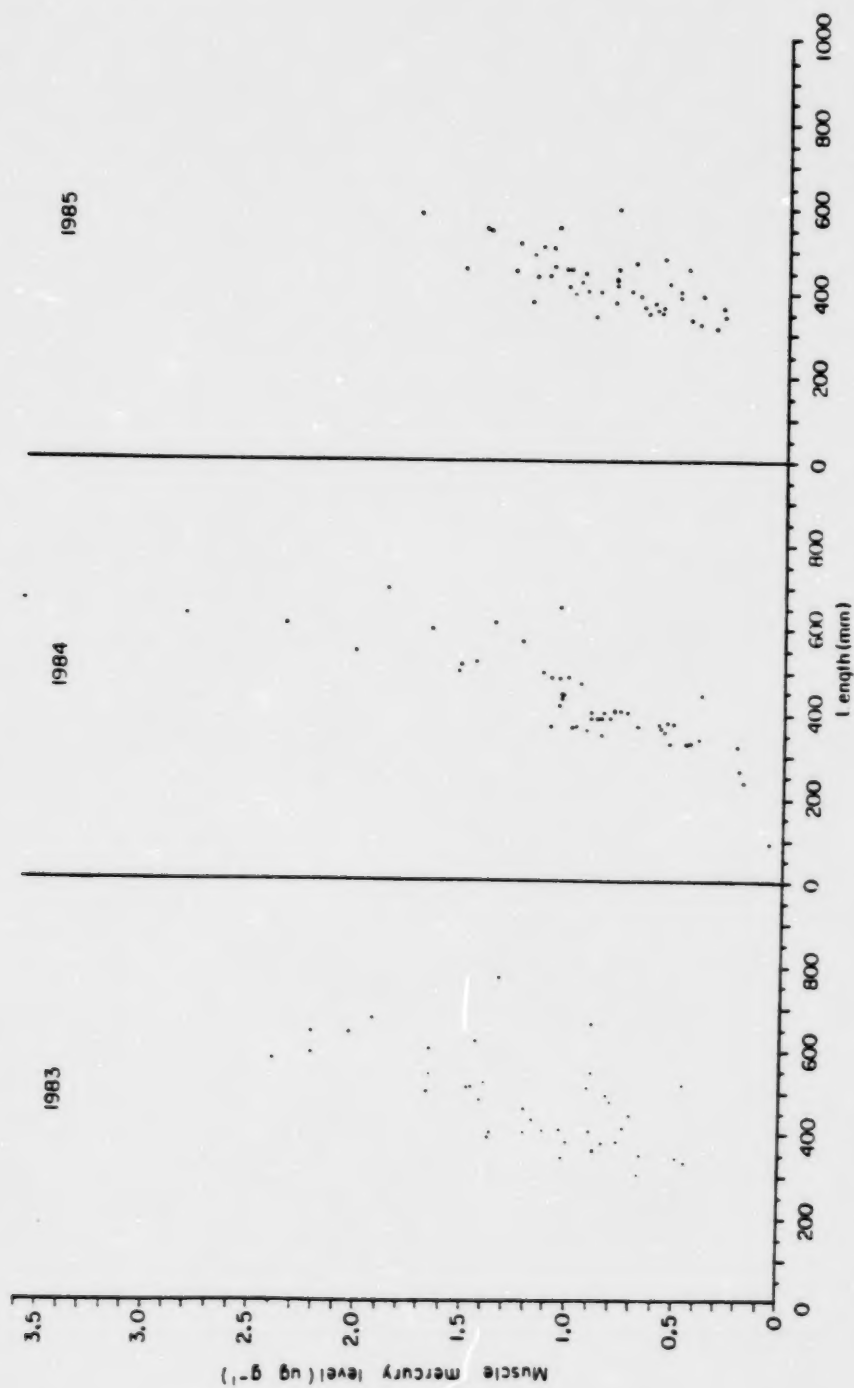
Osik Lake northern pike.



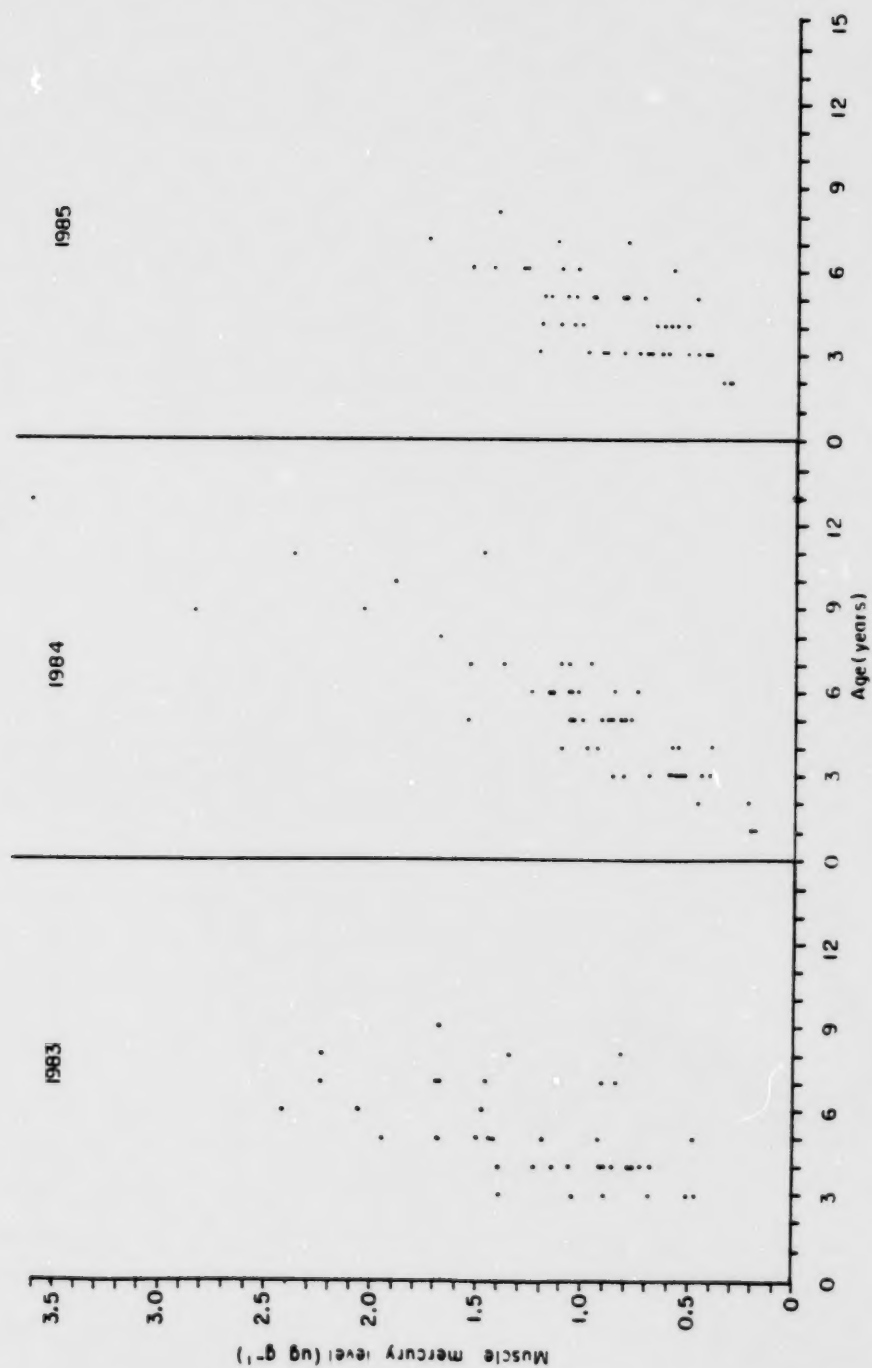
Macheewin Lake northern pike.



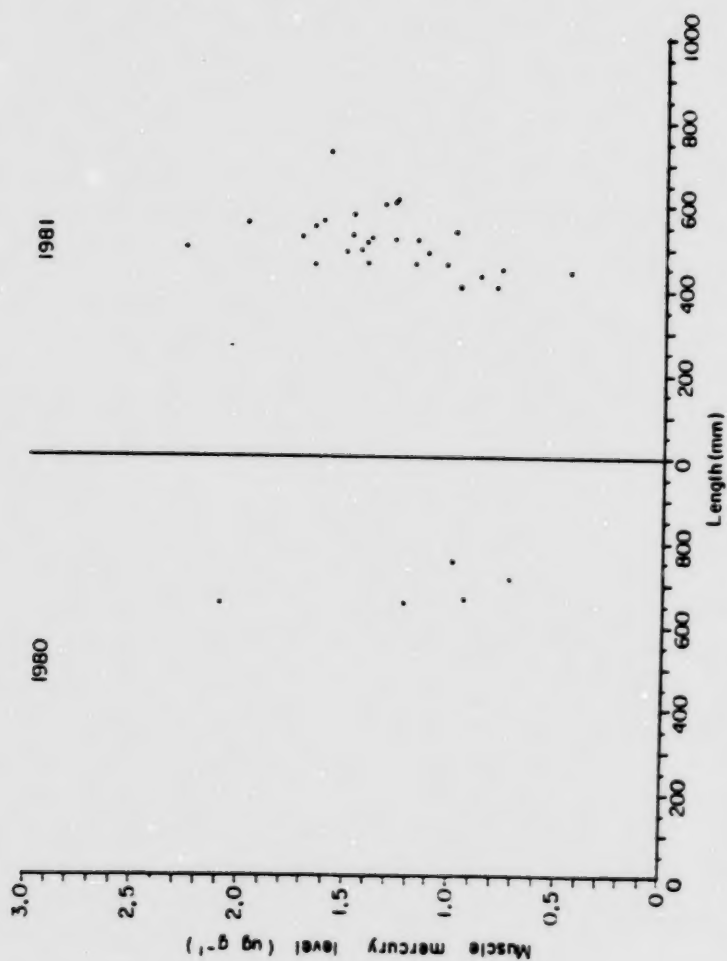
Footprint Lake northern pike.



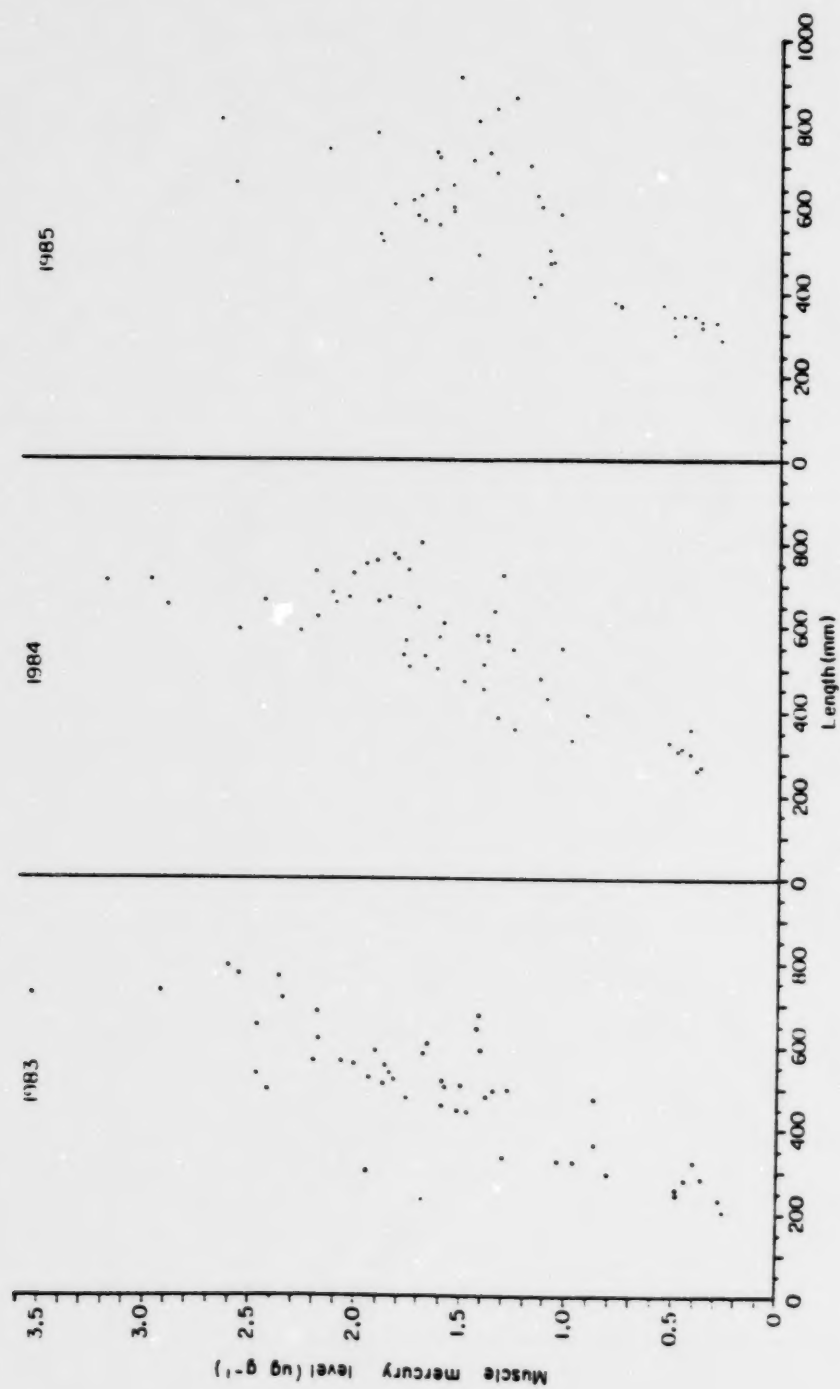
Footprint Lake northern pike.



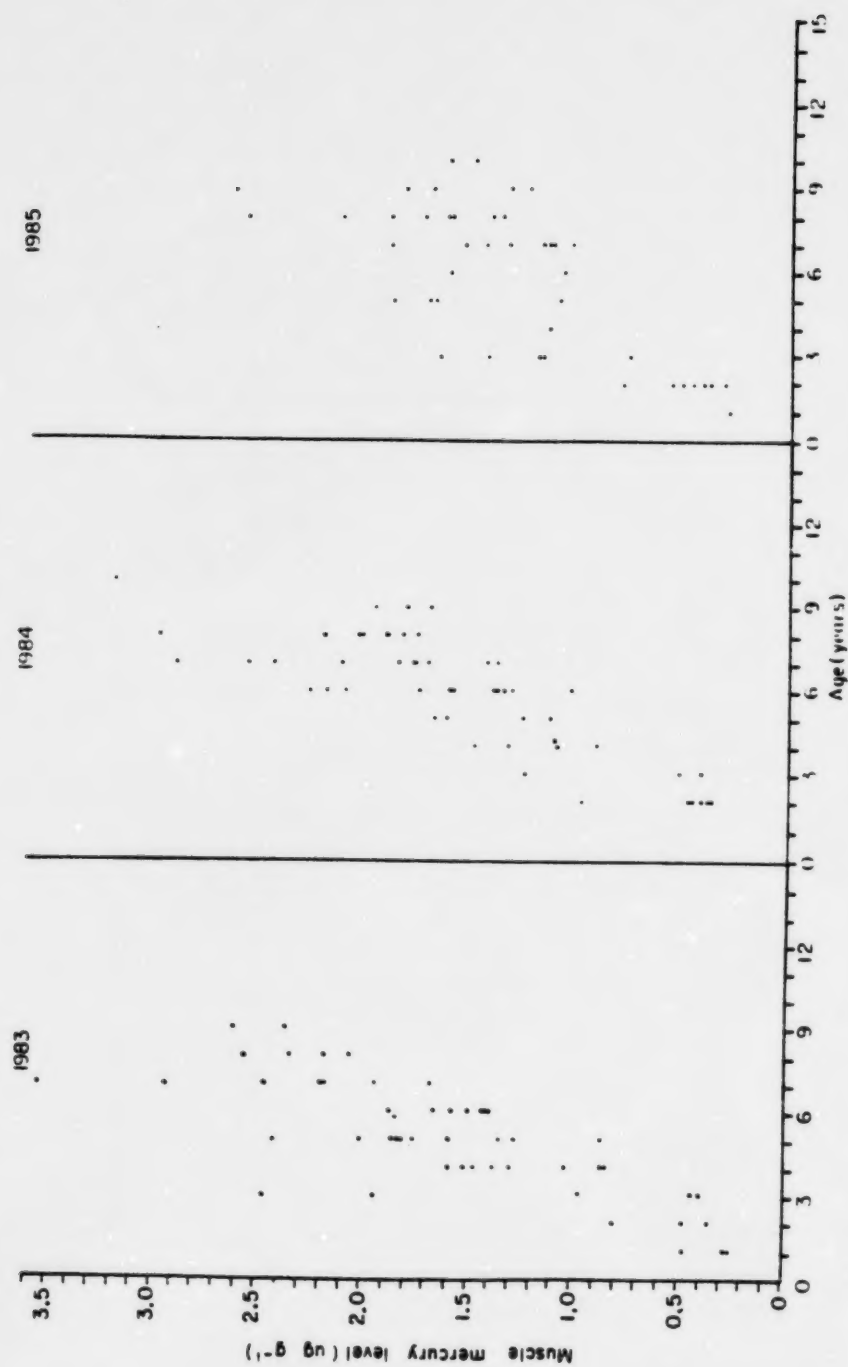
Footprint Lake northern pike.



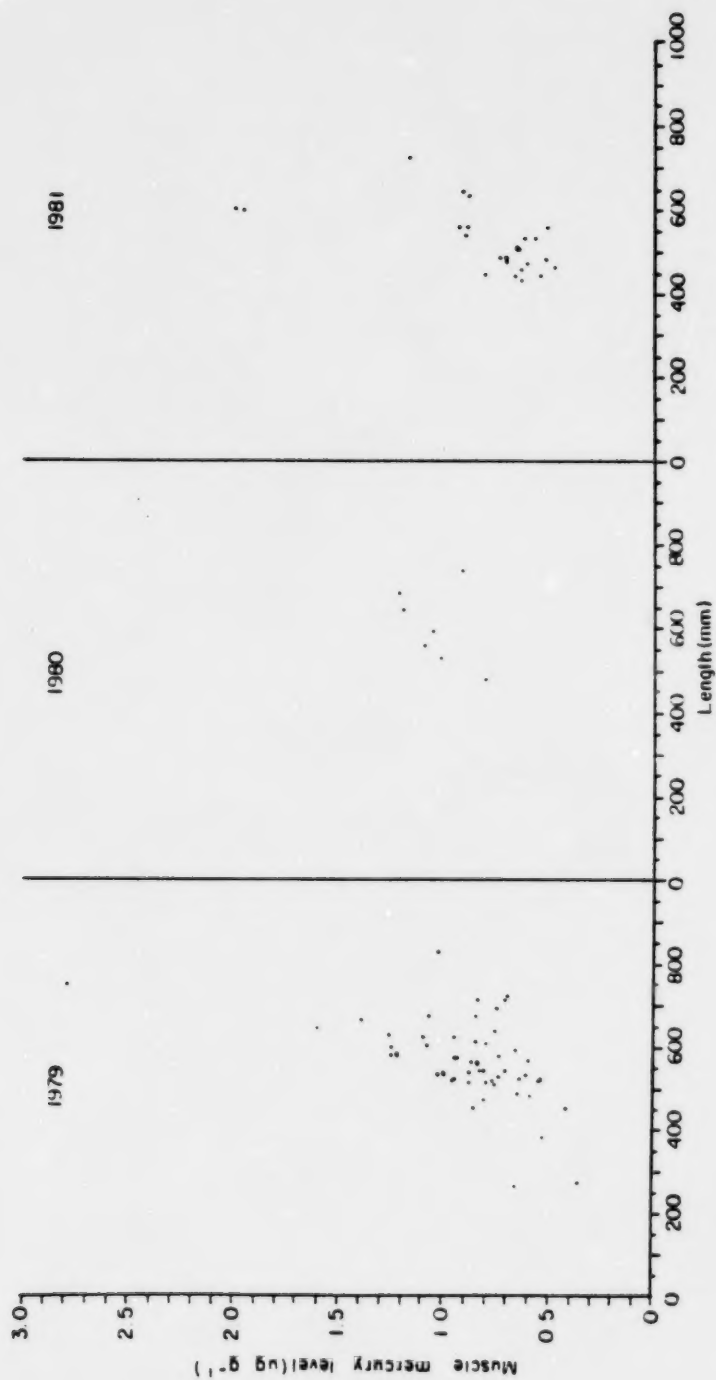
Threepoint Lake northern pike.



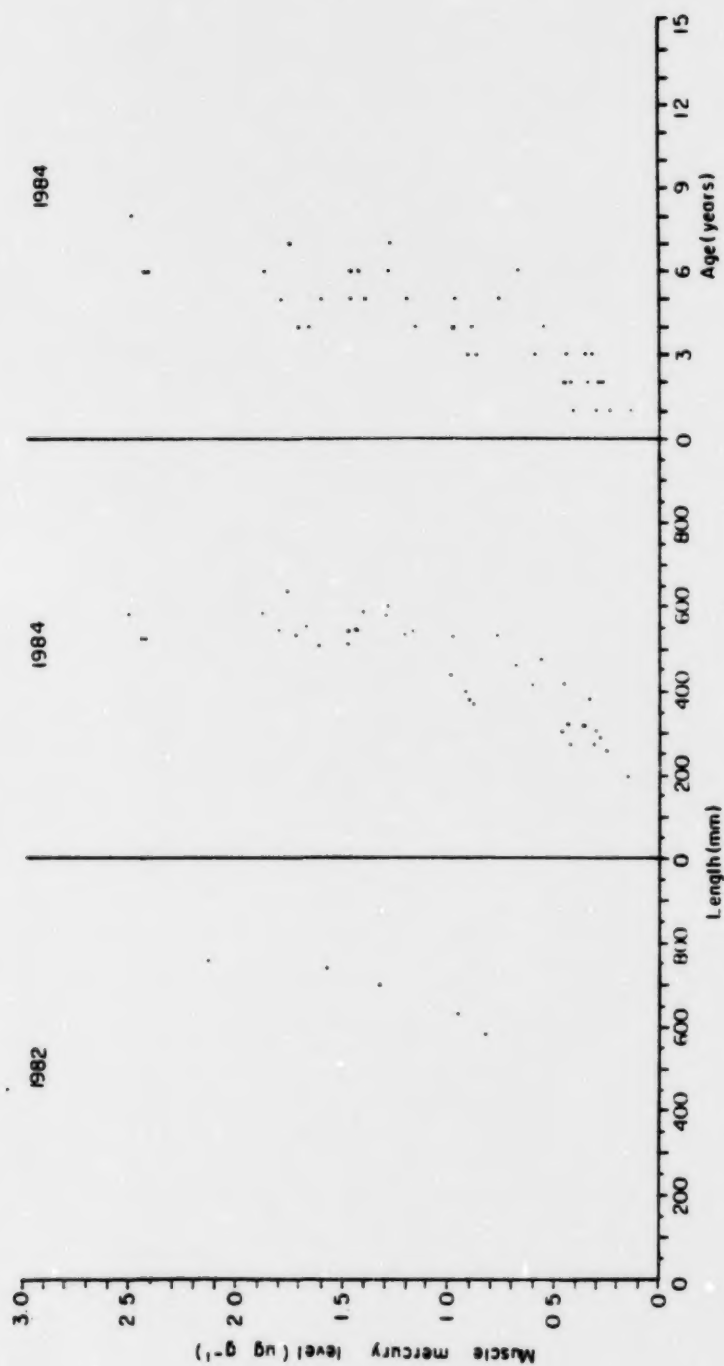
Threepoint Lake northern pike.



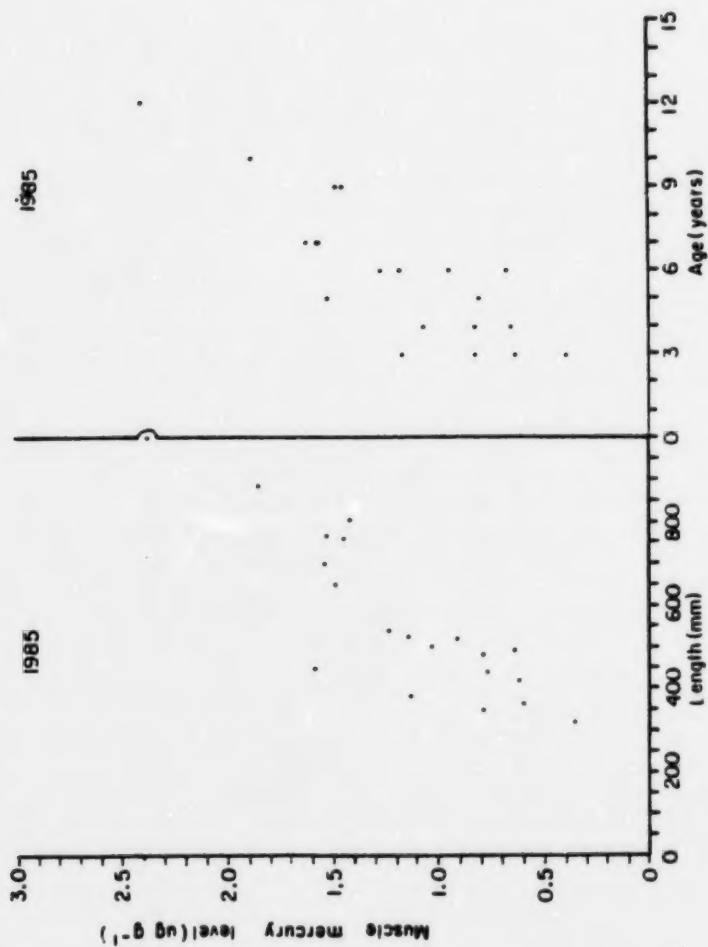
Threepoint Lake northern pike.



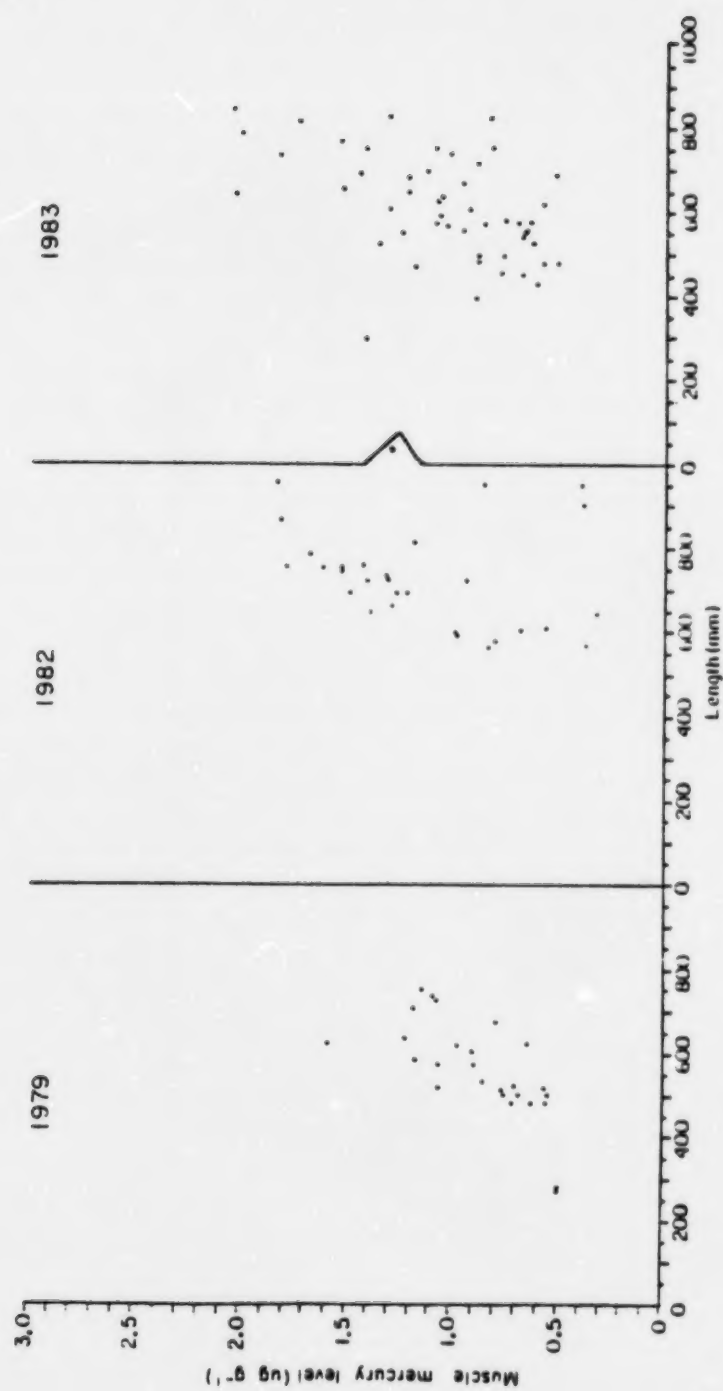
Muskwa Lake northern pike.



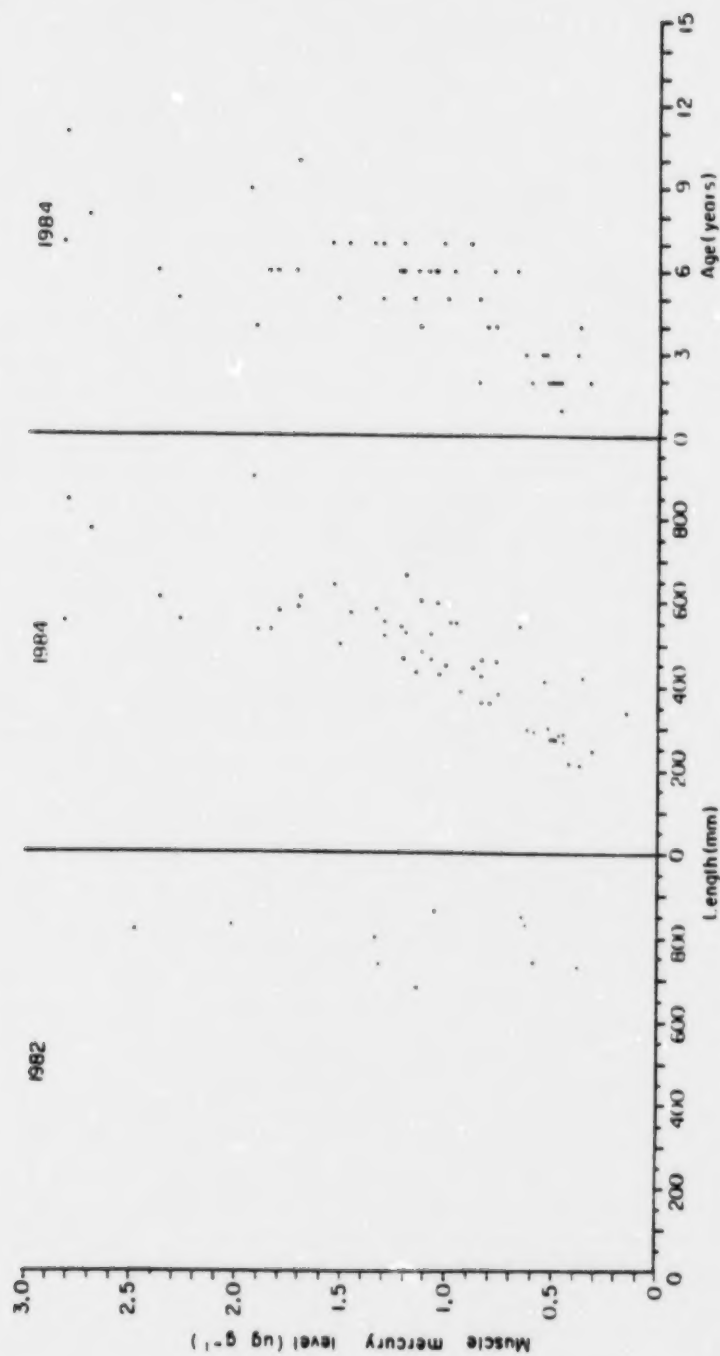
Muskwaite Lake northern pike.



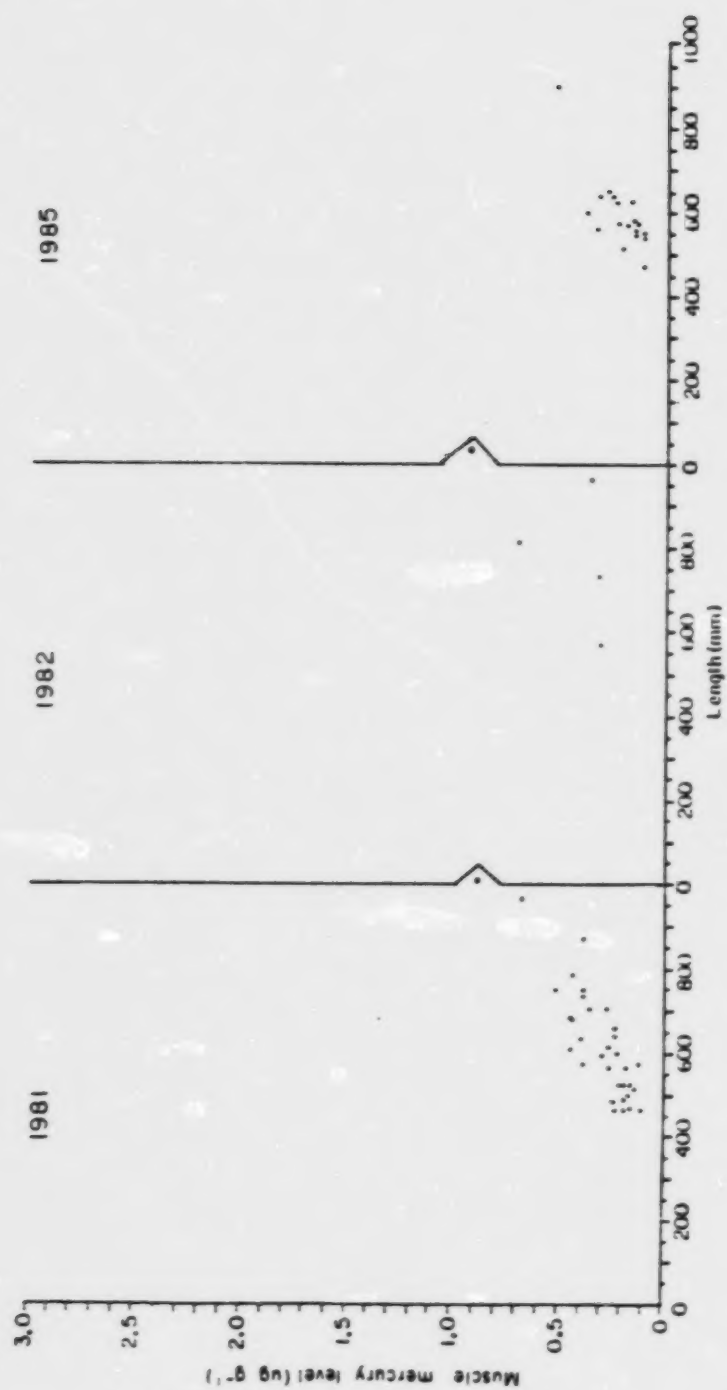
Birch Tree Lake northern pike.



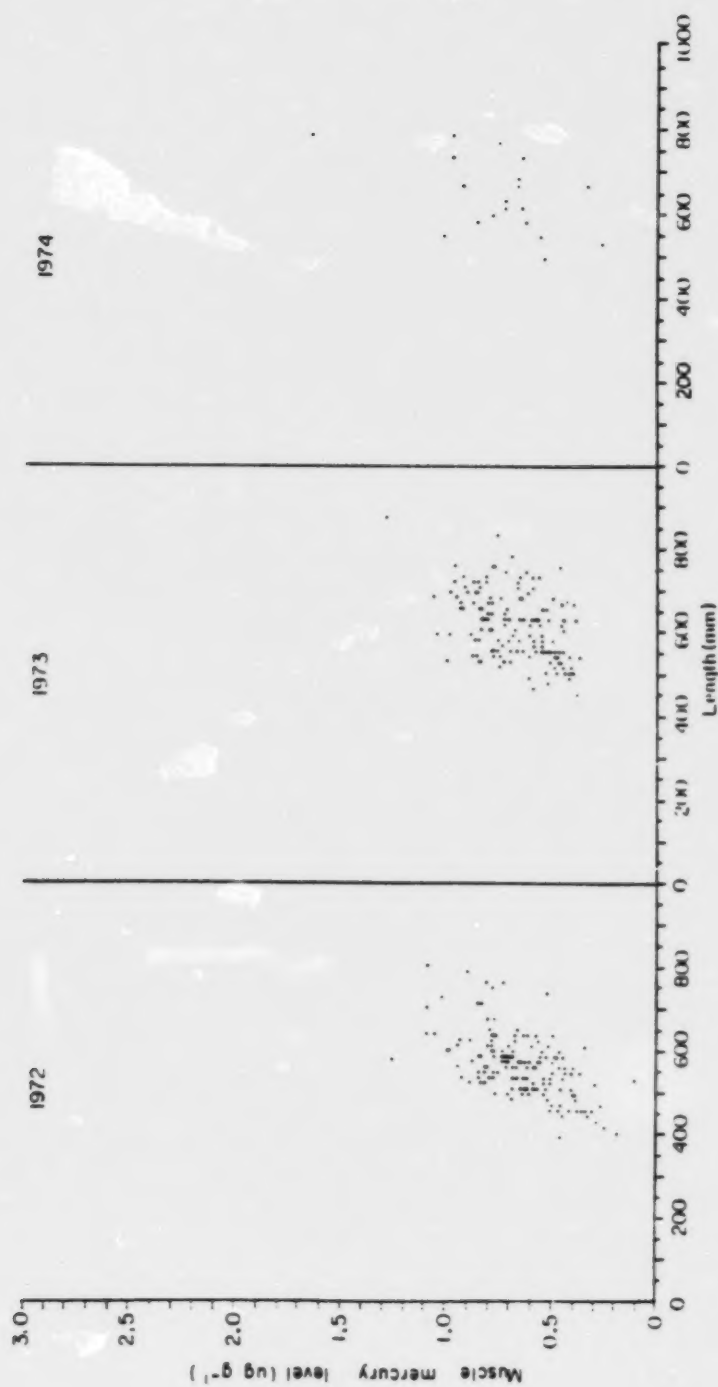
Mystery Lake northern pike.



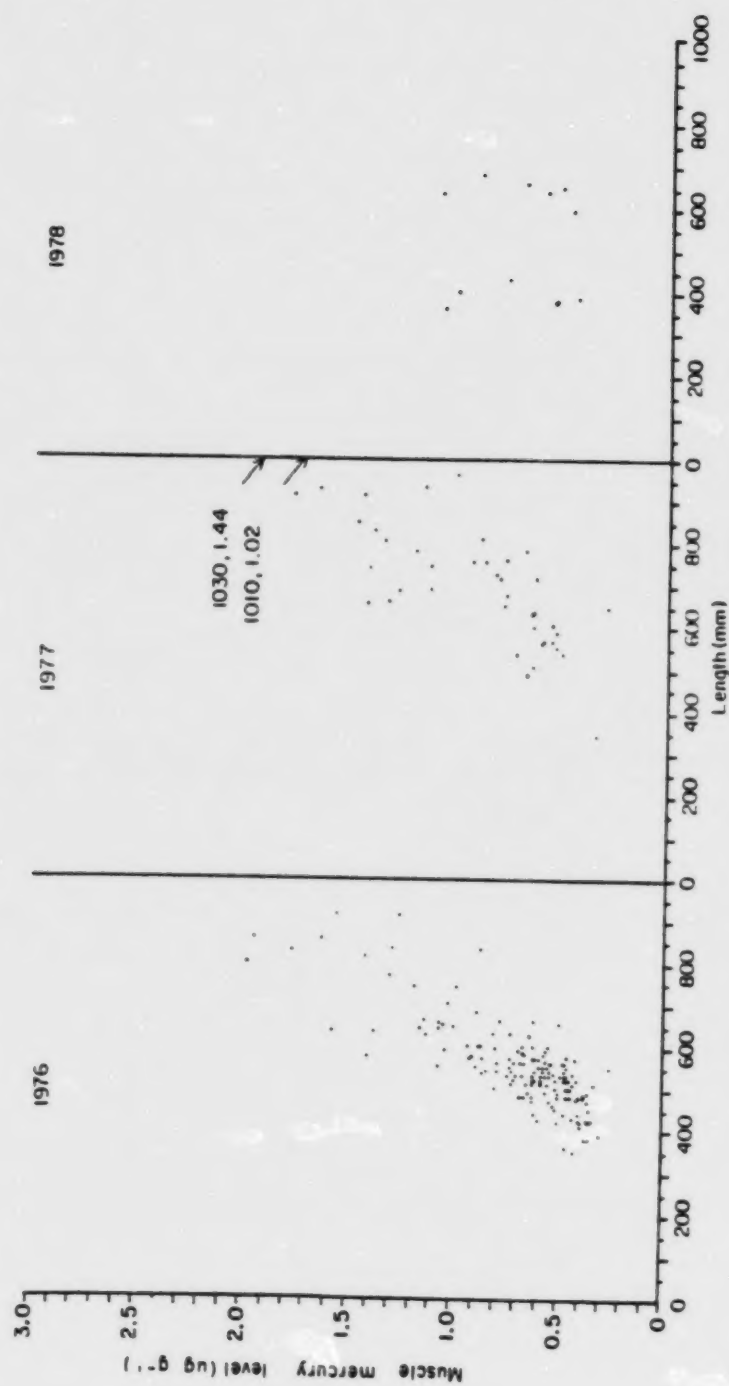
Apussigamasi Lake northern pike.



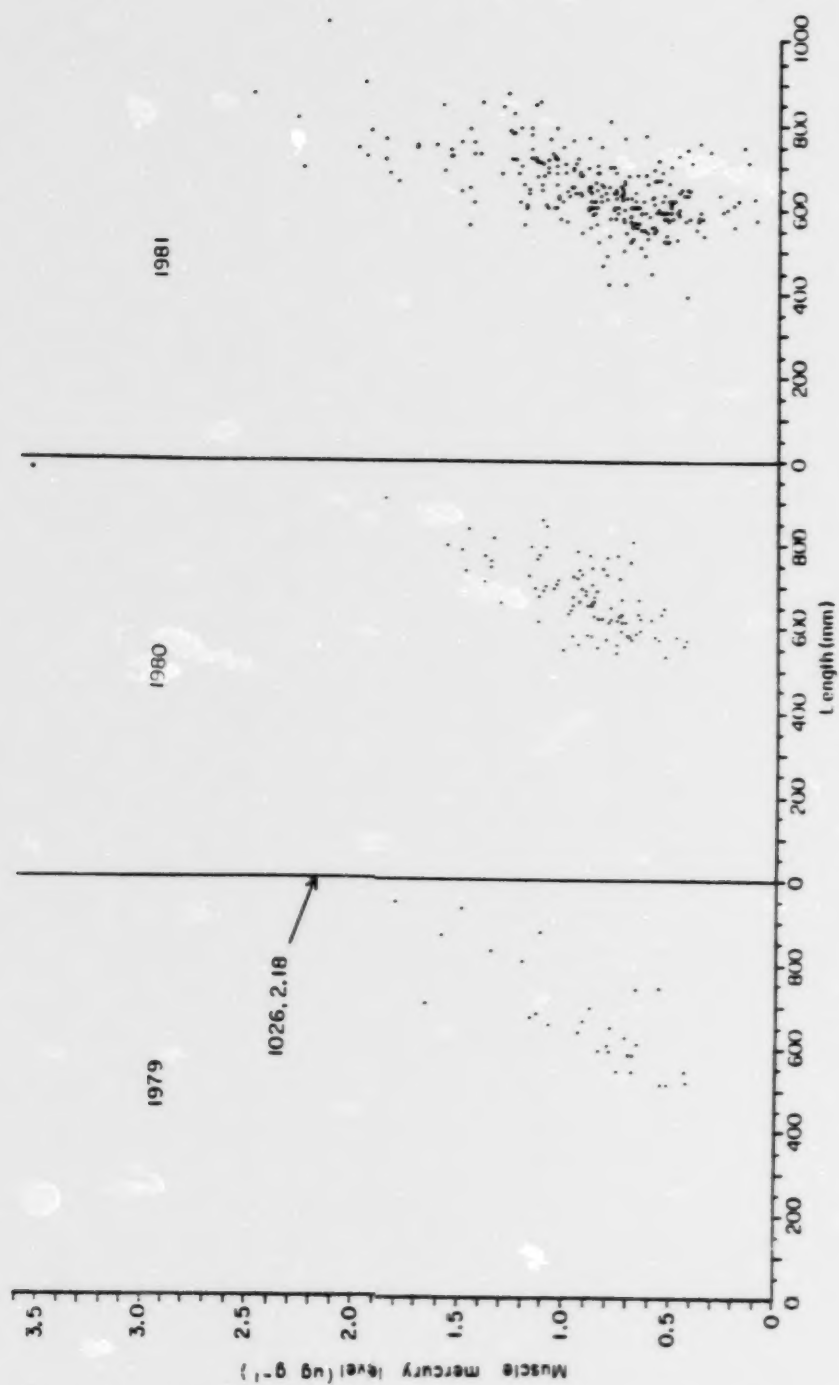
Assean Lake northern pike.



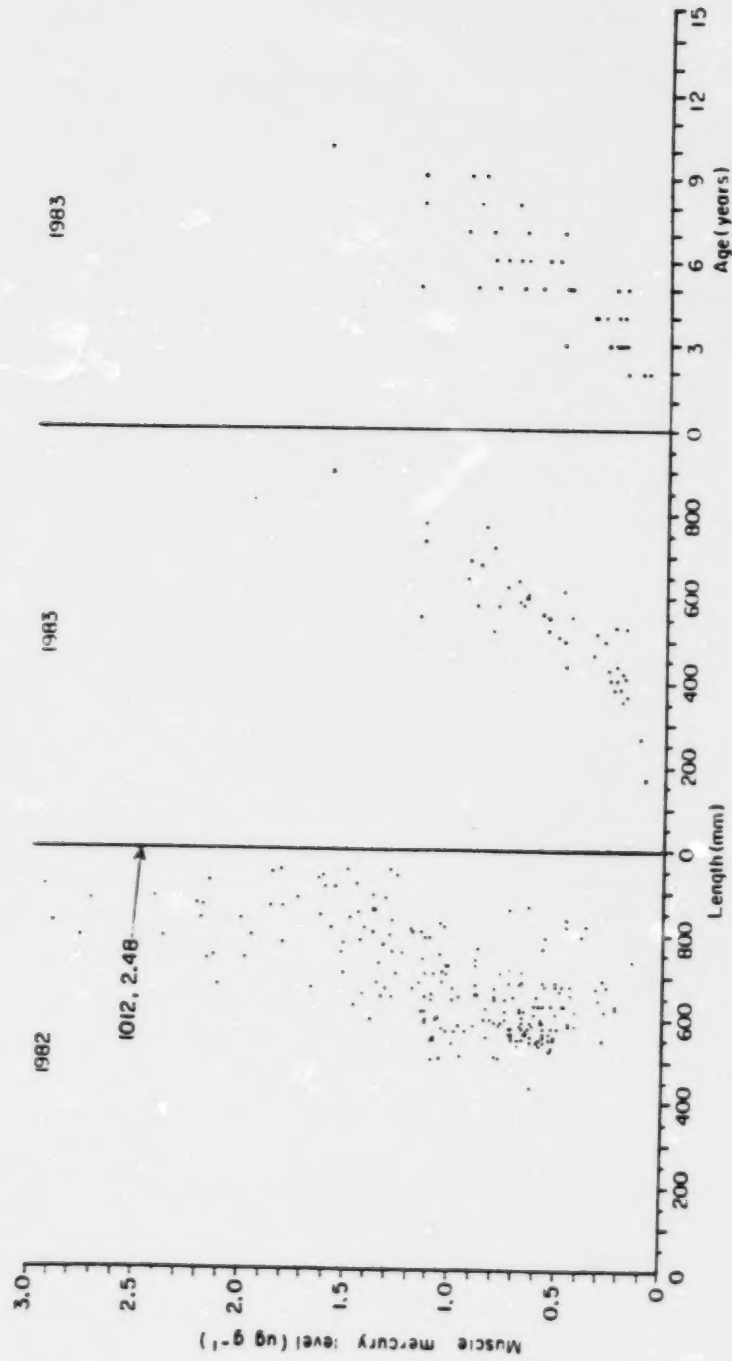
Sipiwesk Lake northern pike.



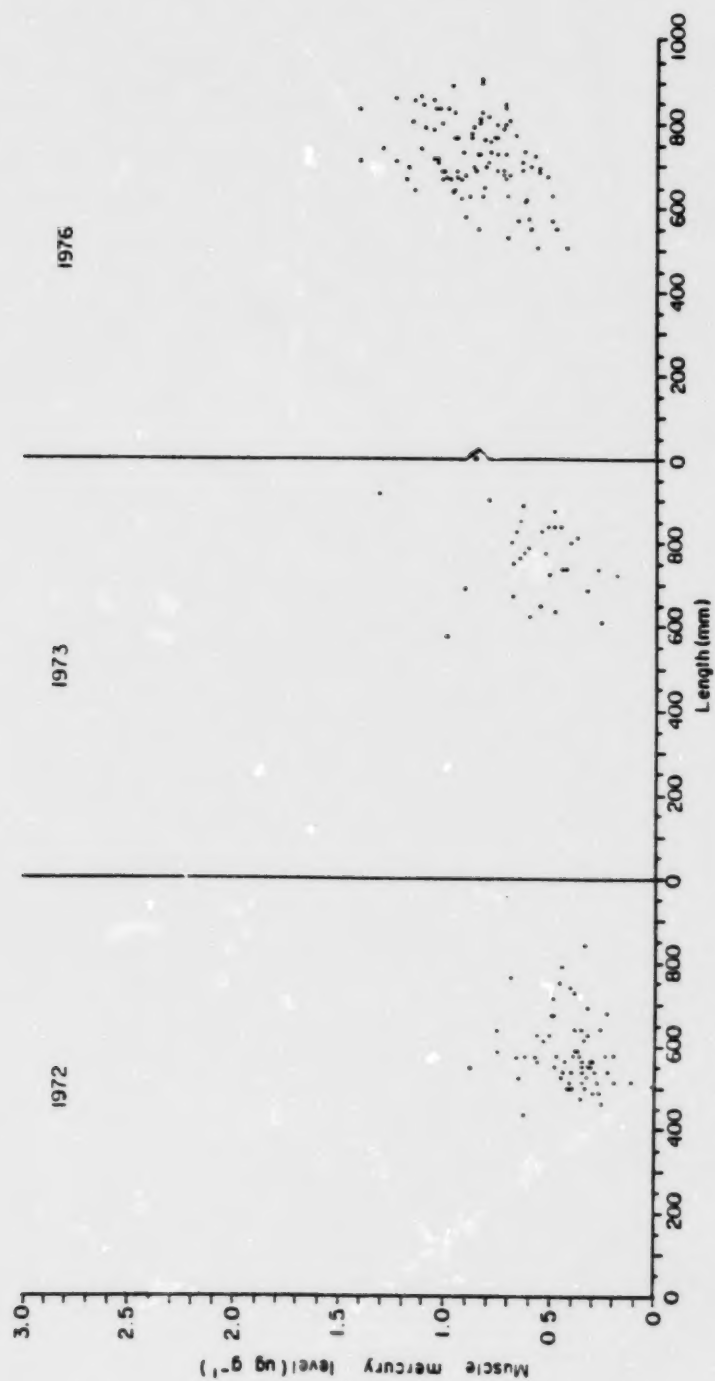
Sipiwesk Lake northern pike.



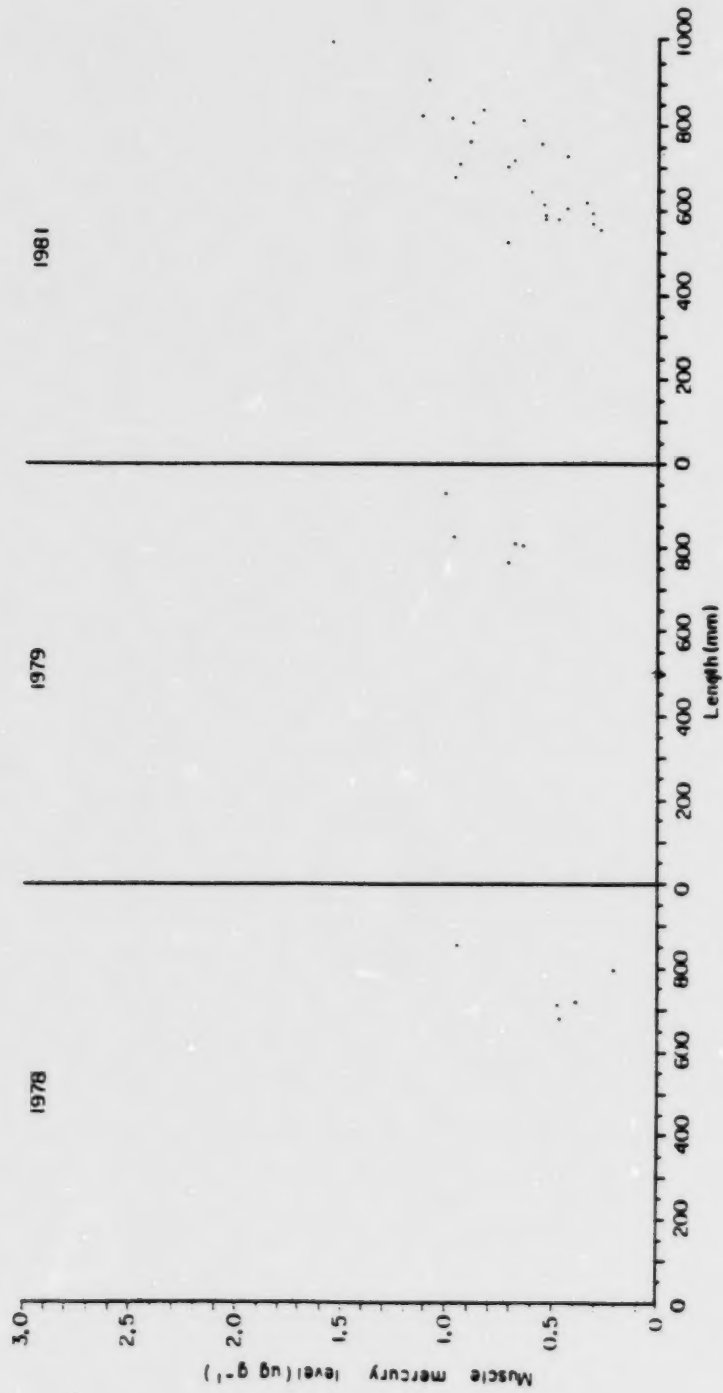
Sipiwek Lake northern pike.



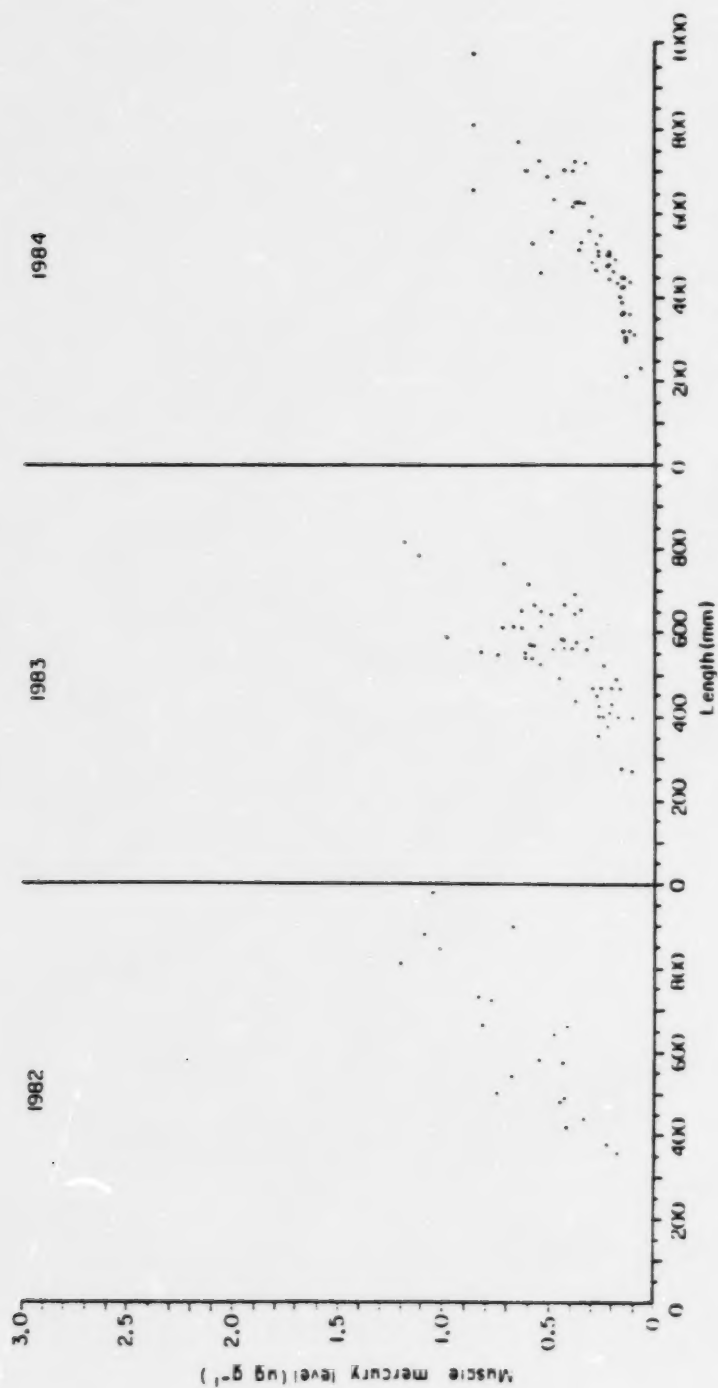
Sipiwesk Lake northern pike.



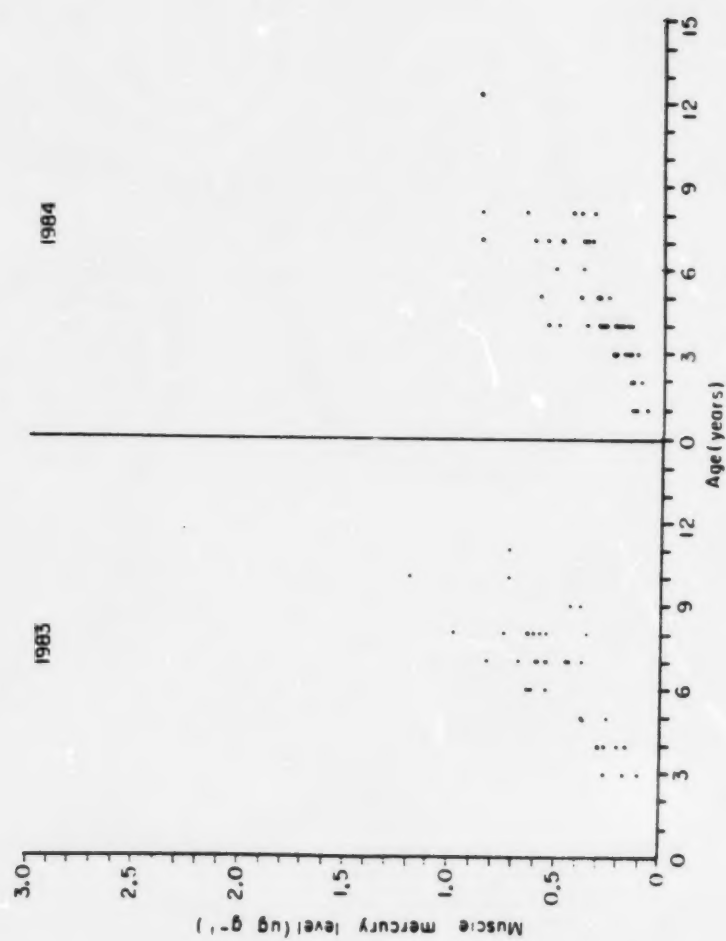
Sipiwesk Lake northern pike.



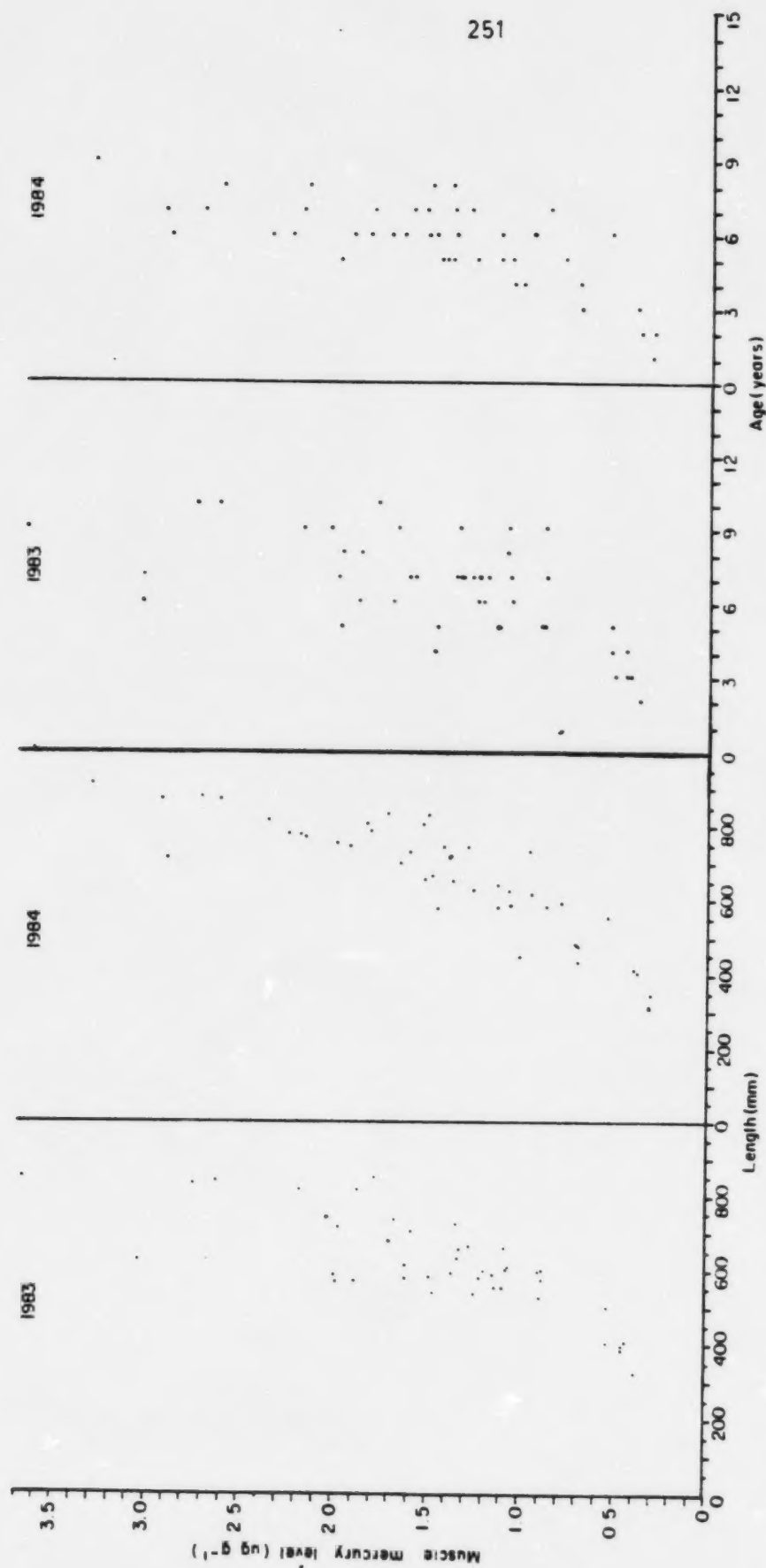
Split Lake northern pike.



Split Lake northern pike.



Split Lake northern pike.



Stephens Lake northern pike.

Appendix 7. Regression coefficient (r^2) values for linear, exponential and power regression functions determined from Hg data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Notigi	linear exponential power	0.196	0.238	0.342	0.765	0.745	0.710	0.738	0.803	0.599
		0.118	0.151	0.206	0.713	0.722	0.633	0.787	0.838	0.575
		0.052	0.105	0.095	0.811	0.735	0.744	0.822	0.884	0.840
Wapsu	linear exponential power	0.508	0.282	0.293	0.609	0.469	0.392	0.149	0.084	0.029
		0.426	0.245	0.252	0.634	0.506	0.427	0.184	0.131	0.052
		0.466	0.223	0.255	0.808	0.443	0.619	0.215	0.192	0.168
Footprint	linear exponential power	0.284	0.327	0.360	0.379	0.388	0.315	0.246	0.400	0.288
		0.374	0.333	0.372	0.375	0.395	0.325	0.239	0.371	0.259
		0.340	0.253	0.197	0.378	0.399	0.393	0.267	0.396	0.371
Threepoint	linear exponential power	0.648	0.377	0.318	0.676	0.705	0.649	0.607	0.706	0.519
		0.554	0.402	0.292	0.723	0.806	0.687	0.637	0.680	0.406
		0.532	0.381	0.254	0.771	0.832	0.817	0.715	0.753	0.731
Mystery	linear exponential power	n.a.	0.524	0.724	n.a.	0.569	0.788	n.a.	0.242	0.375
		n.a.	0.689	0.792	n.a.	0.559	0.688	n.a.	0.226	0.360
		n.a.	0.708	0.800	n.a.	0.636	0.869	n.a.	0.180	0.383

n.a. = not available

Nelson River lakes, 1983.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Sipiwesk	linear exponential power	0.303	0.271	0.307	0.715	0.693	0.595	0.694	0.749	0.656
		0.323	0.282	0.315	0.635	0.837	0.650	0.694	0.795	0.520
		0.360	0.254	0.231	0.825	0.864	0.852	0.739	0.795	0.735
Split	linear exponential power	0.463	0.309	0.350	0.301	0.036	0.052	0.535	0.552	0.422
		0.376	0.279	0.316	0.253	0.045	0.062	0.610	0.625	0.389
		0.377	0.266	0.313	0.253	0.042	0.055	0.674	0.634	0.426
Stephens	linear exponential power	0.755	0.723	0.866	0.818	0.685	0.596	0.387	0.599	0.456
		0.849	0.836	0.919	0.830	0.702	0.622	0.501	0.697	0.477
		0.782	0.779	0.793	0.890	0.685	0.629	0.555	0.734	0.627

Rat - Burntwood River lakes, 1984.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Karsakuwigamak	linear exponential power	0.474	0.259	0.282	0.890	0.868	0.802	0.487	0.503	0.326
		0.435	0.312	0.319	0.846	0.870	0.724	0.568	0.641	0.366
		0.344	0.279	0.266	0.905	0.883	0.858	0.665	0.705	0.648
W. & C. Mynarski	linear exponential power	0.326	0.287	0.348	0.638	0.550	0.463	0.732	0.726	0.618
		0.323	0.317	0.366	0.768	0.723	0.611	0.749	0.788	0.587
		0.324	0.239	0.221	0.823	0.716	0.695	0.832	0.840	0.810
Rat	linear exponential power	0.103	0.114	0.140	0.930	0.837	0.830	0.539	0.568	0.410
		0.159	0.143	0.182	0.862	0.887	0.717	0.592	0.613	0.400
		0.118	0.112	0.125	0.953	0.820	0.905	0.641	0.663	0.583
Macheewin	linear exponential power	0.336	0.257	0.353	0.723	0.544	0.555	0.390	0.468	0.330
		0.337	0.391	0.498	0.725	0.779	0.747	0.508	0.631	0.376
		0.363	0.320	0.355	0.840	0.759	0.768	0.574	0.659	0.596
Osik	linear exponential power	0.454	0.216	0.240	0.801	0.814	0.796	0.521	0.670	0.406
		0.453	0.232	0.194	0.842	0.887	0.781	0.531	0.656	0.356
		0.397	0.217	0.191	0.862	0.888	0.883	0.628	0.752	0.683
Footprint	linear exponential power	0.581	0.389	0.384	0.661	0.706	0.650	0.776	0.672	0.596
		0.539	0.406	0.400	0.698	0.777	0.692	0.750	0.686	0.506
		0.522	0.355	0.305	0.775	0.774	0.740	0.818	0.736	0.693
Threespoint	linear exponential power	0.251	0.327	0.292	0.692	0.618	0.456	0.656	0.602	0.335
		0.421	0.548	0.446	0.741	0.743	0.532	0.704	0.673	0.377
		0.515	0.542	0.518	0.844	0.788	0.782	0.771	0.747	0.688
Wuskwatim	linear exponential power	0.755	0.637	0.717	0.659	0.459	0.515	0.666	0.647	0.510
		0.825	0.776	0.811	0.794	0.656	0.644	0.730	0.802	0.582
		0.788	0.705	0.699	0.783	0.638	0.709	0.741	0.814	0.759

Rat - Burntwood River lakes, 1984. Cont'd.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Apussigamasi	linear	0.505	0.294	0.285	0.631	0.724	0.484	0.516	0.635	0.477
	exponential	0.404	0.284	0.280	0.538	0.624	0.375	0.606	0.654	0.413
	power	0.426	0.249	0.203	0.665	0.653	0.588	0.591	0.678	0.569

Nelson River lakes, 1984.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Split	linear	0.459	0.366	0.488	0.608	0.516	0.521	0.596	0.690	0.627
	exponential	0.440	0.343	0.426	0.692	0.690	0.619	0.708	0.769	0.564
	power	0.372	0.279	0.277	0.709	0.686	0.696	0.681	0.754	0.733
Stephens	linear	0.873	0.663	0.771	0.840	0.678	0.646	0.481	0.715	0.687
	exponential	0.875	0.807	0.846	0.809	0.821	0.651	0.613	0.822	0.702
	power	0.841	0.755	0.745	0.880	0.833	0.840	0.633	0.828	0.805

Rat - Burntwood River lakes, 1985.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Pemichigamau	linear	0.306	0.015	0.112	0.938	0.917	0.828	0.604	0.648	0.381
	exponential	0.315	0.010	0.110	0.858	0.893	0.692	0.608	0.705	0.343
	power	0.252	0.039	0.105	0.949	0.942	0.938	0.711	0.767	0.734
Costello	linear	0.356	0.207	0.298	0.768	0.086	0.050	0.402	0.530	0.285
	exponential	0.346	0.241	0.331	0.683	0.132	0.083	0.516	0.650	0.336
	power	0.341	0.235	0.290	0.798	0.146	0.105	0.592	0.705	0.604
Suwannee	linear	0.666	0.490	0.451	0.923	0.645	0.603	0.508	0.618	0.589
	exponential	0.616	0.610	0.586	0.891	0.821	0.764	0.604	0.757	0.541
	power	0.766	0.567	0.526	0.943	0.820	0.800	0.703	0.758	0.698
Rat	linear	0.642	0.342	0.417	0.940	0.769	0.739	0.602	0.723	0.588
	exponential	0.478	0.325	0.398	0.924	0.829	0.690	0.603	0.723	0.509
	power	0.358	0.260	0.237	0.919	0.802	0.794	0.690	0.786	0.748
Not Igt	linear	0.283	0.205	0.245	0.865	0.706	0.635	0.225	0.429	0.344
	exponential	0.230	0.206	0.200	0.833	0.844	0.692	0.275	0.492	0.339
	power	0.168	0.195	0.193	0.881	0.831	0.761	0.352	0.538	0.510
Wapleau	linear	0.525	0.330	0.254	0.661	0.706	0.596	0.463	0.617	0.376
	exponential	0.553	0.331	0.253	0.646	0.735	0.567	0.491	0.687	0.366
	power	0.564	0.308	0.225	0.826	0.782	0.759	0.659	0.771	0.713
Footprint	linear	0.474	0.243	0.336	0.837	0.877	0.881	0.447	0.486	0.392
	exponential	0.435	0.229	0.1331	0.803	0.874	0.834	0.438	0.453	0.315
	power	0.344	0.194	0.202	0.826	0.849	0.852	0.483	0.479	0.382
Threepoint	linear	0.636	0.490	0.403	0.833	0.762	0.652	0.549	0.537	0.275
	exponential	0.674	0.533	0.434	0.823	0.781	0.608	0.600	0.585	0.284
	power	0.631	0.499	0.437	0.860	0.805	0.804	0.713	0.695	0.658

Rat - Burntwood River lakes, 1985.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Birch Tree	linear	0.488	0.462	0.509	0.800	0.859	0.745	0.711	0.754	0.783
	exponential	0.480	0.488	0.502	0.696	0.808	0.640	0.604	0.666	0.606
	power	0.412	0.441	0.426	0.809	0.870	0.835	0.604	0.695	0.766

Nelson River lakes, 1985.

Lake	Function	Whitefish			Walleye			Northern pike		
		age	length	weight	age	length	weight	age	length	weight
Assean	linear	na	0.017	0.025	na	0.098	0.052	na	0.636	0.556
	exponential	na	0.072	0.071	na	0.118	0.078	na	0.521	0.387
	power	na	0.067	0.058	na	0.121	0.100	na	0.539	0.480

Appendix 8. Length-muscle Hg and age-muscle Hg regressions for whitefish, walleye and northern pike caught from lakes studied under Project 3.3 of the Canada-Manitoba Mercury Monitoring Agreement, 1983 - 1985. Regressions based on $\log_{10}$ - $\log_{10}$

Rat-Burntwood Lakes, 1983-1985.

Lake	Year	Whitefish			Walleye			Northern pike		
		age - muscle lg	length - muscle lg	age - muscle lg	age - muscle lg	length - muscle lg	age - muscle lg	age - muscle lg	length - muscle lg	age - muscle lg
Karsakuljamaik	1984	-1.3121 + 0.614 x	-2.4969 + 0.722 x	-0.6329 + 0.858 x	-4.3015 + 1.766 x	-0.6653 + 1.107 x	-3.8716 + 1.467 x			
	1985	-0.9595 + 0.352 x	-1.09106 + 0.168 x	-0.9292 + 0.098 x	-4.1194 + 1.647 x	-0.5908 + 0.837 x	-3.6989 + 1.378 x			
	1986	-1.4673 + 0.712 x	-3.8968 + 1.144 x	-1.2044 + 1.212 x	-6.7459 + 2.579 x	-1.1441 + 1.511 x	-6.2118 + 2.232 x			
Castella ^a	1985	-1.6164 + 0.394 x	-6.6269 + 2.060 x	-1.5381 + 1.051 x	-5.8712 + 2.088 x	-1.2519 + 1.076 x	-7.5798 + 2.590 x			
	1985	-2.1932 + 0.784 x	-6.8384 + 2.079 x	-1.7895 + 1.006 x	-7.9383 + 2.681 x	-1.4721 + 1.184 x	-8.3944 + 2.820 x			
Rat	1983	-	-7.0502 + 2.4779 x	-	-5.0219 + 2.033 x	-	-2.5913 + 0.992 x			
	1984	-0.8375 + 0.285 x	-1.6263 + 0.403 x	-0.8221 + 1.009 x	-3.8873 + 1.603 x	-0.5626 + 0.987 x	-3.8273 + 1.464 x			
	1985	-1.2767 + 0.674 x	-2.6140 + 0.769 x	-0.6360 + 0.768 x	-3.6909 + 1.488 x	-0.5907 + 0.886 x	-3.7664 + 1.422 x			
Not Igt	1983	-0.8586 + 0.189 x	-1.7737 + 0.414 x	-0.6666 + 0.807 x	-4.4048 + 1.754 x	-0.7781 + 1.031 x	-4.2953 + 1.600 x			
	1985	-0.9435 + 0.592 x	-1.8977 + 0.521 x	-0.6567 + 0.756 x	-3.5486 + 1.393 x	-0.3688 + 0.655 x	-2.8632 + 1.097 x			
Napisu	1983	-1.2720 + 0.901 x	-3.1866 + 1.029 x	-0.5936 + 0.721 x	-2.5156 + 1.026 x	-0.1817 + 0.547 x	-1.9222 + 0.783 x			
	1985	-1.4078 + 1.055 x	-3.2900 + 1.126 x	-0.5904 + 0.704 x	-3.4696 + 1.408 x	-0.2317 + 0.572 x	-3.5158 + 1.350 x			
Macheedun	1984	-1.9579 + 0.909 x	-4.9763 + 1.488 x	-1.0026 + 0.597 x	-4.5667 + 1.603 x	-0.9483 + 0.993 x	-5.7552 + 2.006 x			
	1984	-1.2853 + 0.613 x	-2.6829 + 0.753 x	-0.7689 + 0.746 x	-3.6855 + 1.401 x	-0.7533 + 1.222 x	-5.4319 + 2.018 x			
Footprint	1983	-1.4058 + 0.964 x	-4.1885 + 1.327 x	-0.5136 + 0.632 x	-2.7000 + 1.072 x	-0.4327 + 0.691 x	-3.0928 + 1.176 x			
	1984	-2.0072 + 1.288 x	-5.4144 + 1.719 x	-0.8559 + 0.911 x	-4.4631 + 1.741 x	-0.7652 + 1.041 x	-6.0389 + 2.266 x			
	1985	-1.3121 + 0.614 x	-2.8430 + 0.786 x	-0.5459 + 0.563 x	-2.9128 + 1.142 x	-0.6433 + 0.873 x	-5.0309 + 1.874 x			

^a non-flooded lakes

Rat-Burntwood lakes, 1983 - 1985.

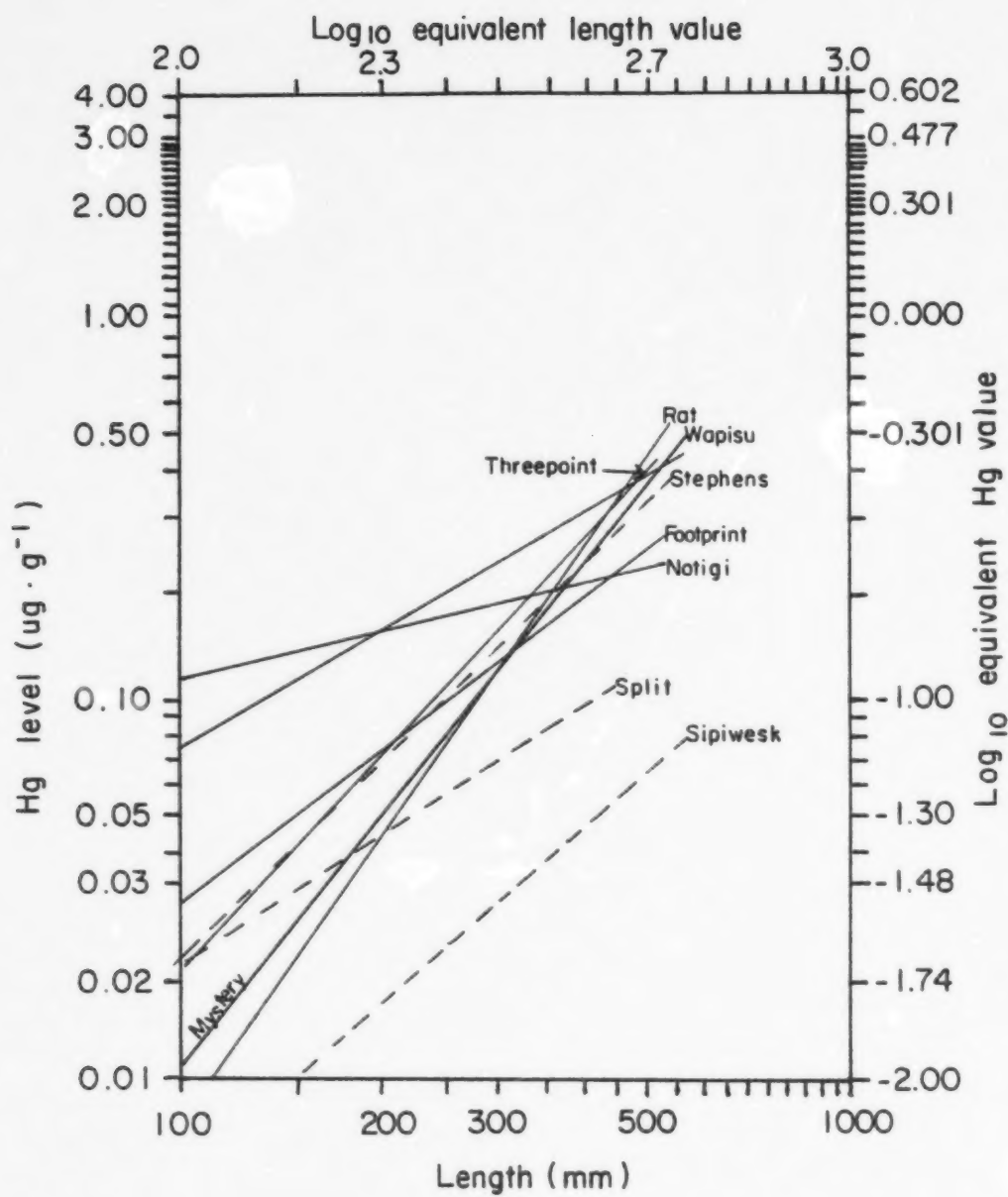
Lake	Year	Whitefish			Walleye			Northern pike		
		age - muscle Hg	length - muscle Hg	age - muscle Hg	length - muscle Hg	age - muscle Hg	length - muscle Hg	age - muscle Hg	length - muscle Hg	
Threepoint	1983	-2.0130 + 1.753 x	-5.5302 + 1.907 x	-0.7077 + 0.865 x	-3.5556 + 1.450 x	-0.5185 + 0.994 x	-4.0971 + 1.584 x			
	1984	-1.9211 + 1.718 x	-6.4982 + 2.284 x	-0.5931 + 0.694 x	-3.6243 + 1.438 x	-0.6274 + 1.052 x	-4.0482 + 1.535 x			
	1985	-1.6375 + 1.175 x	-4.3625 + 1.462 x	-0.6771 + 0.719 x	-3.5491 + 1.398 x	-0.4806 + 0.776 x	-3.4310 + 1.290 x			
Muskatim	1984	-1.3071 + 0.836 x	-4.9652 + 1.663 x	-0.9437 + 0.789 x	-4.2476 + 1.567 x	-0.7407 + 1.160 x	-6.5301 + 2.438 x			
Birch Tree	1985	-1.0655 + 0.577 x	-3.1113 + 0.998 x	-0.4258 + 0.502 x	-3.6667 + 1.478 x	-0.5838 + 0.830 x	-3.1439 + 1.161 x			
Mystery	1983	-	-6.3790 + 2.206 x	-	-6.6300 + 2.476 x	-	-1.9749 + 0.713 x			
Apusigamasi	1984	-1.2497 + 0.812 x	-3.4733 + 1.150 x	-0.5639 + 0.733 x	-3.4298 + 1.389 x	-0.5311 + 0.805 x	-4.1788 + 1.559 x			

Nelson River lakes, 1983 - 1985.

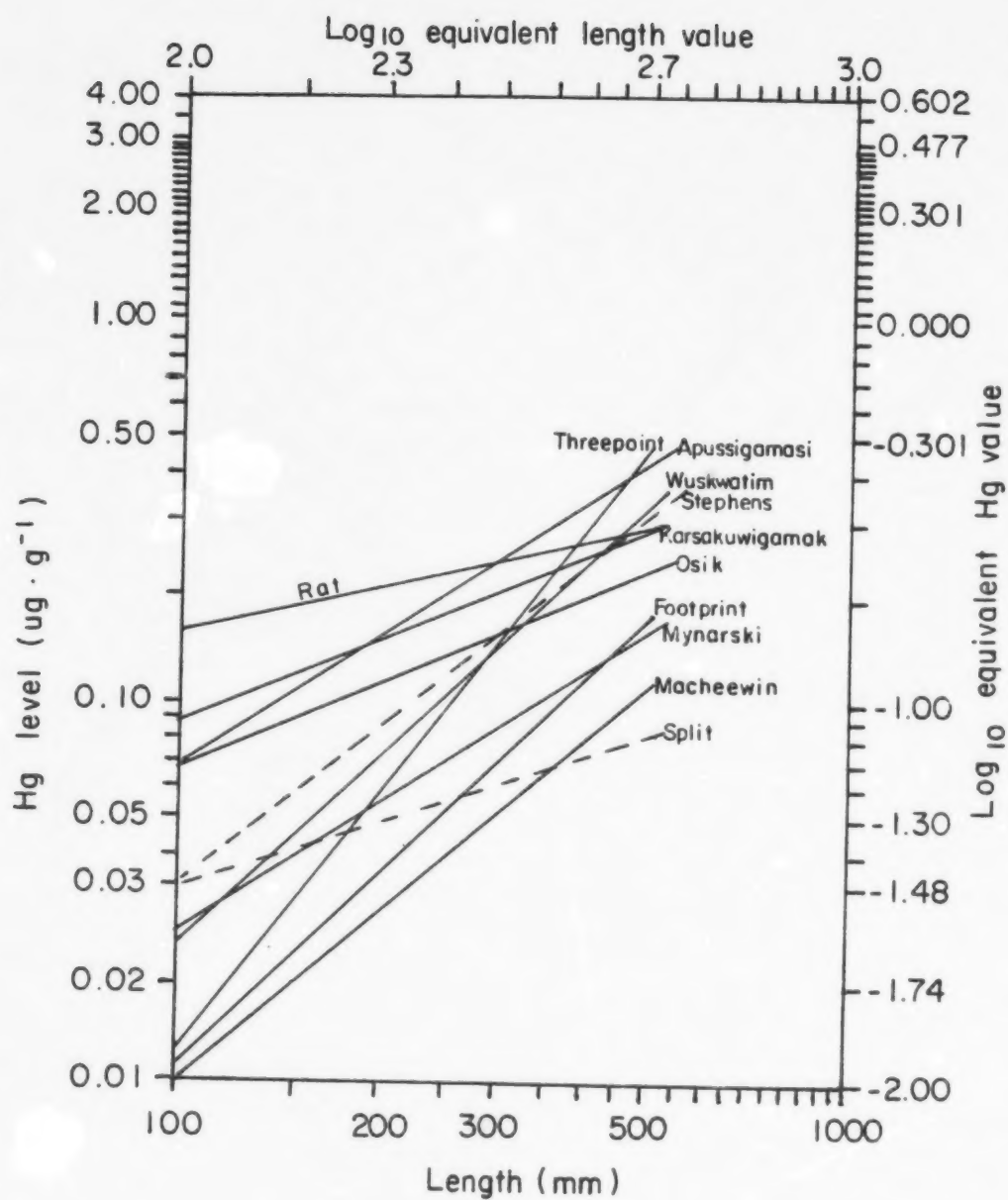
Lake	Year	Whitefish			Walleye			Northern pike		
		age - muscle Hg	length - muscle Hg	age - muscle Hg	length - muscle Hg	age - muscle Hg	length - muscle Hg	age - muscle Hg	length - muscle Hg	
Sipilwek	1983	-2.0130 + 0.884 x	-5.2972 + 1.520 x	-1.0873 + 1.007 x	-5.9177 + 2.250 x	-1.3802 + 1.489 x	-6.6013 + 2.293 x			
	1984	-	-7.4203 + 2.300 x	-	-3.1513 + 0.958 x					
Spitt	1983	-1.6925 + 0.793 x	-3.9784 + 1.137 x	-0.8049 + 0.629 x	-2.1134 + 0.712 x	-1.3582 + 1.259 x	-5.8328 + 1.985 x			
	1984	-1.5452 + 0.474 x	-2.6756 + 0.588 x	-1.1965 + 0.806 x	-4.6284 + 1.640 x	-1.1530 + 0.949 x	-5.0059 + 1.643 x			
Stephens	1983	-1.5101 + 0.931 x	-5.1444 + 1.726 x	-0.6331 + 0.720 x	-3.8819 + 1.544 x	-0.7907 + 1.114 x	-5.6602 + 2.073 x			
	1984	-1.4545 + 0.870 x	-4.2915 + 1.404 x	-0.7659 + 0.685 x	-4.4401 + 1.672 x	-0.7106 + 1.122 x	-5.8920 + 2.129 x			

* non - flooded

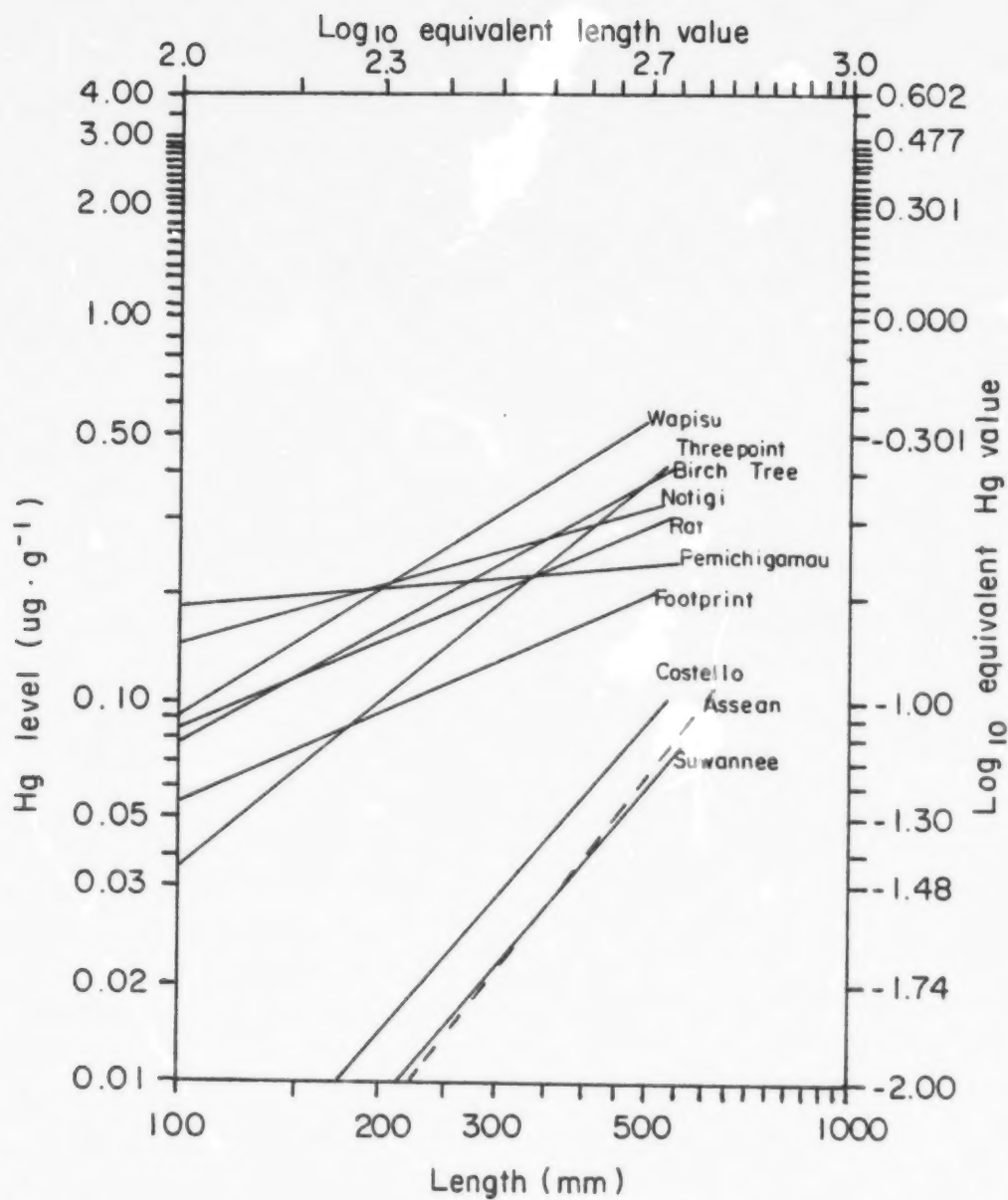
Appendix 9. Regression lines of transformed ($\log_{10}$ length - $\log_{10}$ muscle Hg) data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.



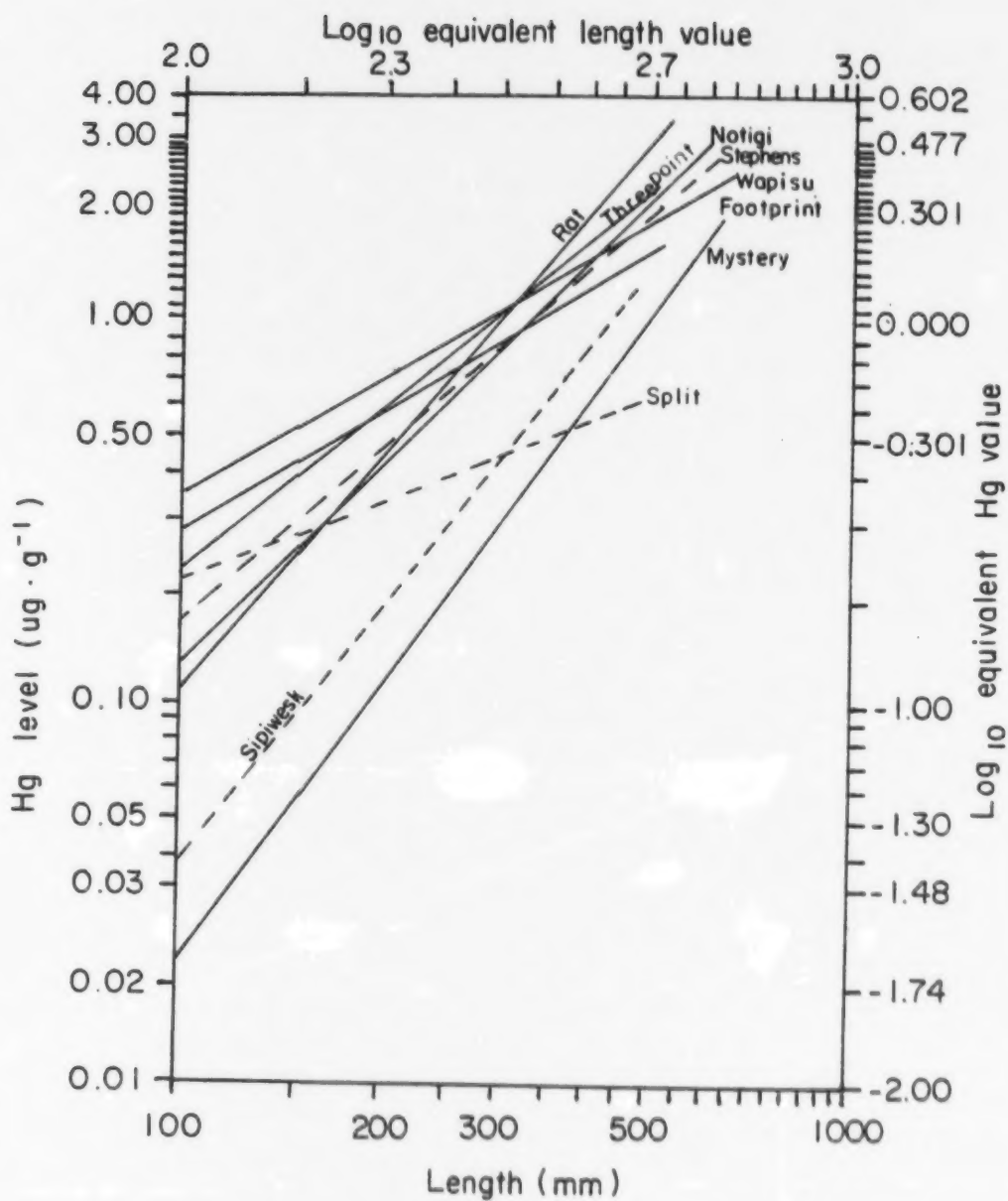
1983 whitefish



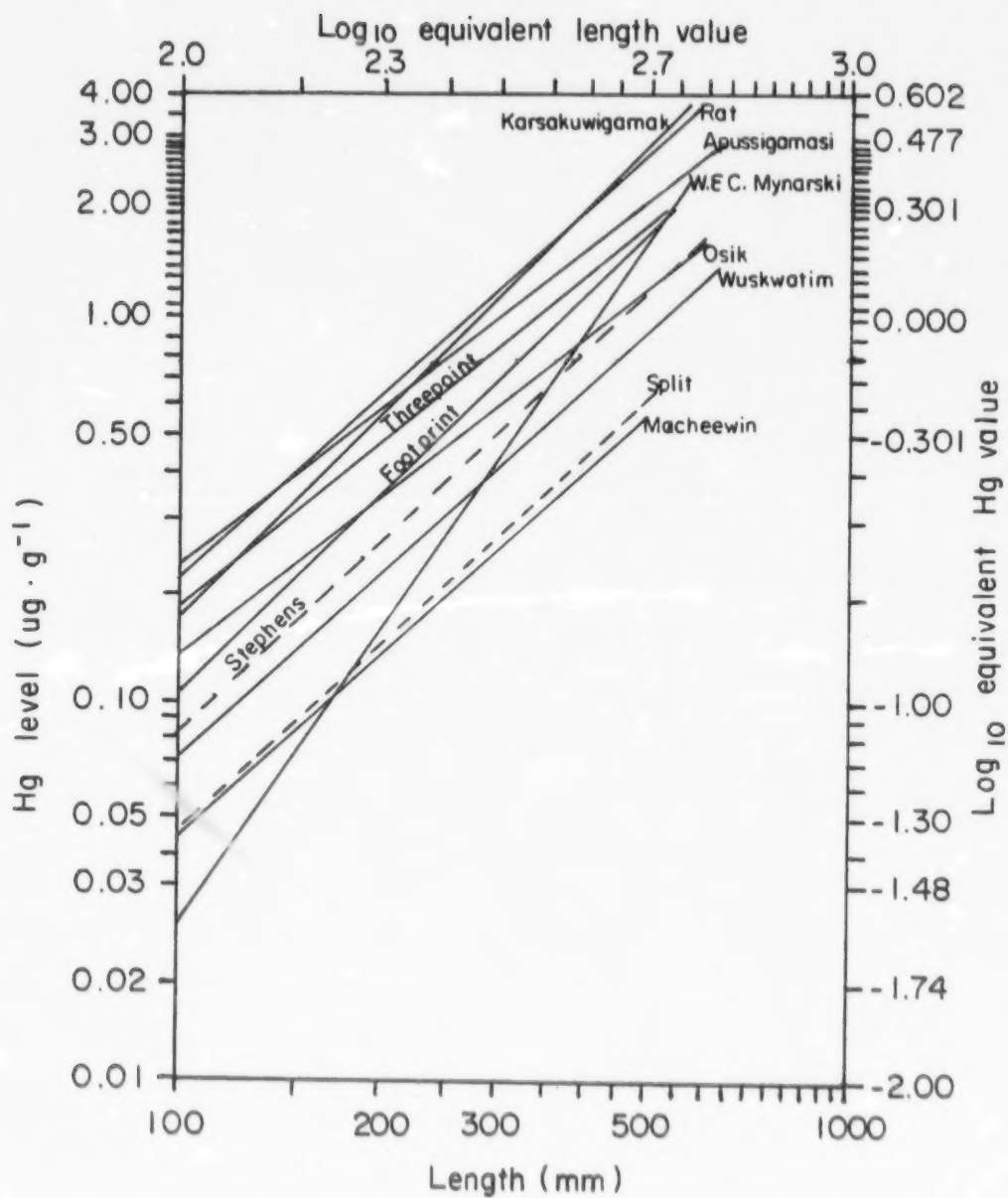
1984 whitefish



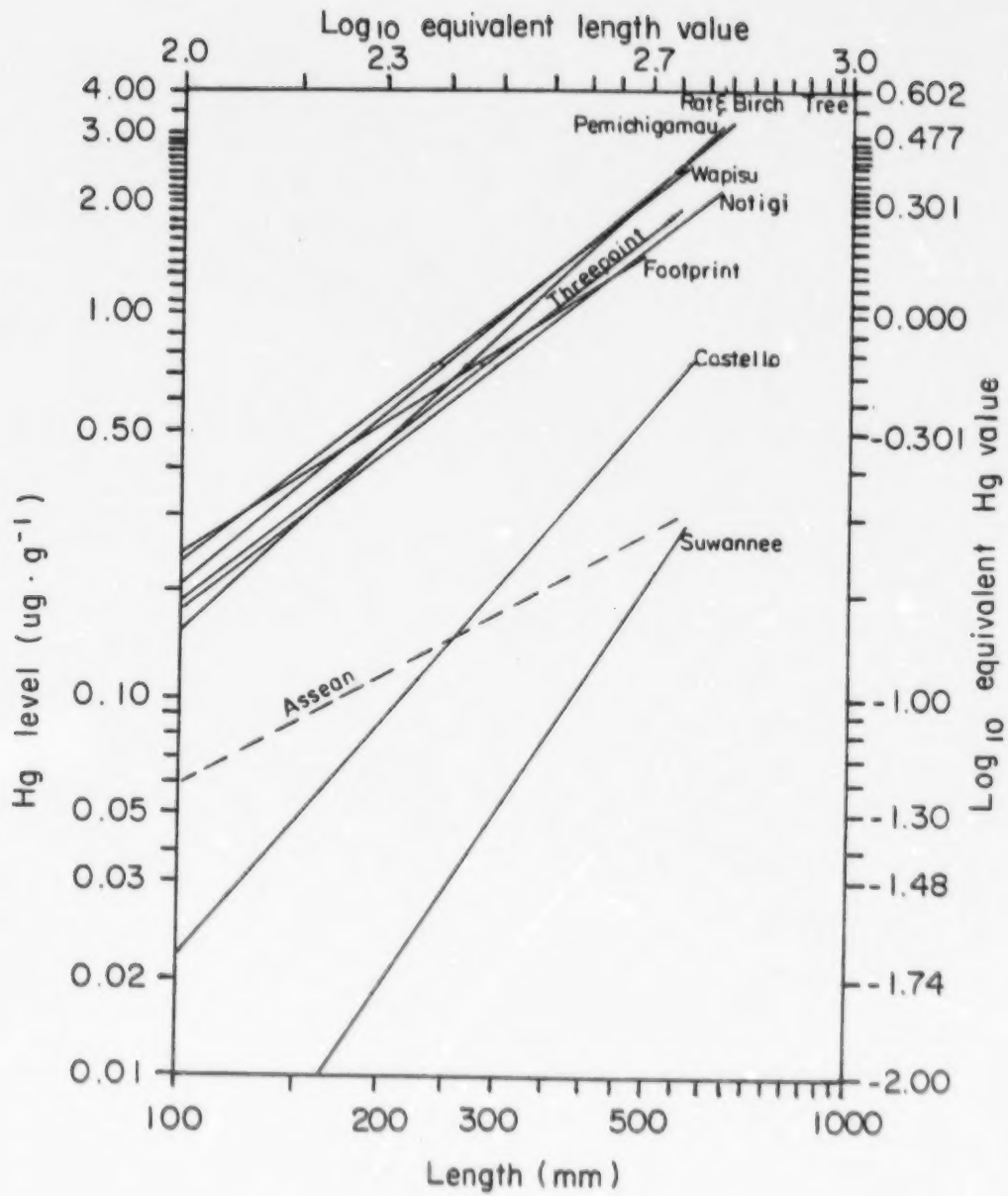
1985 whitefish



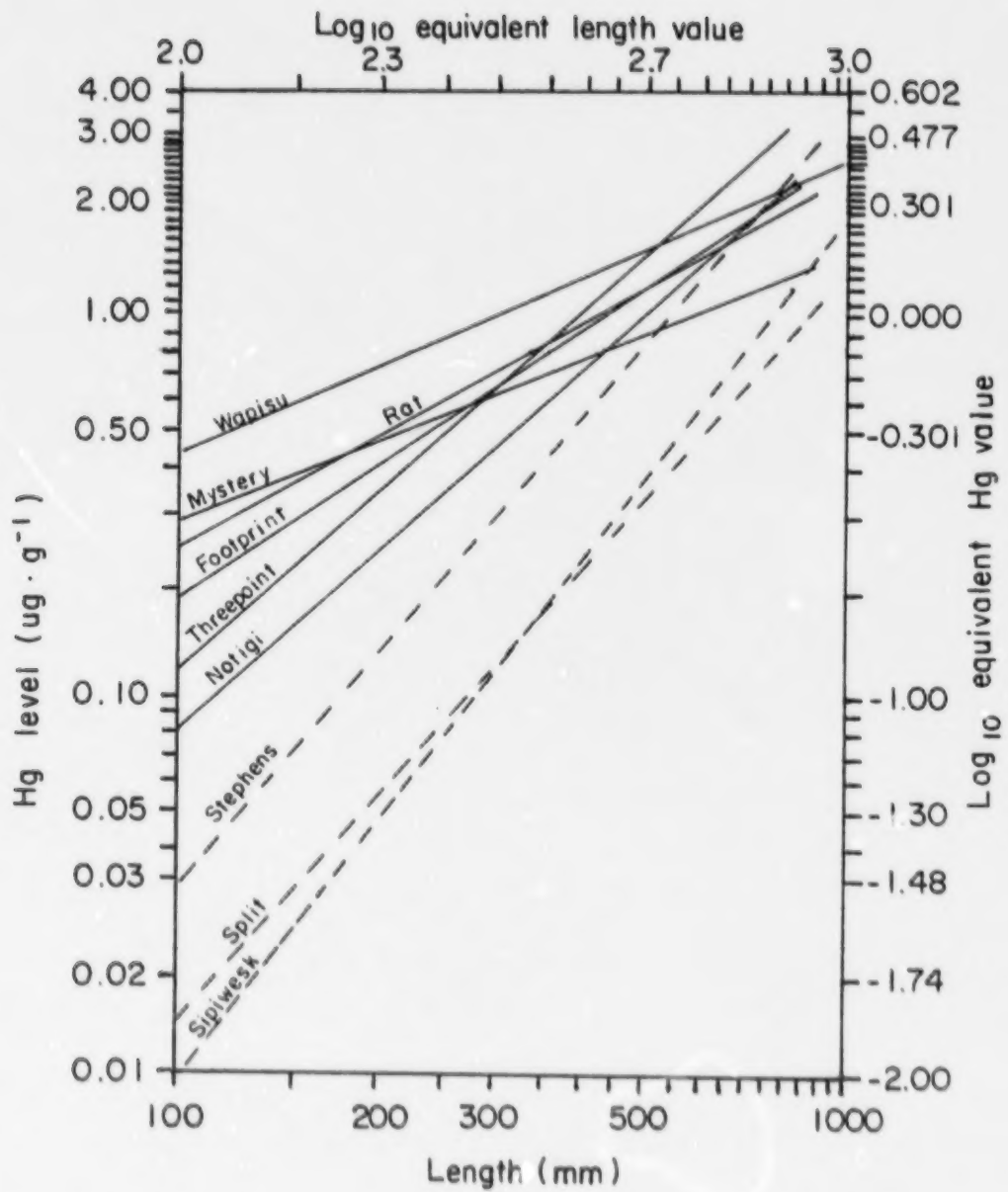
1983 walleye



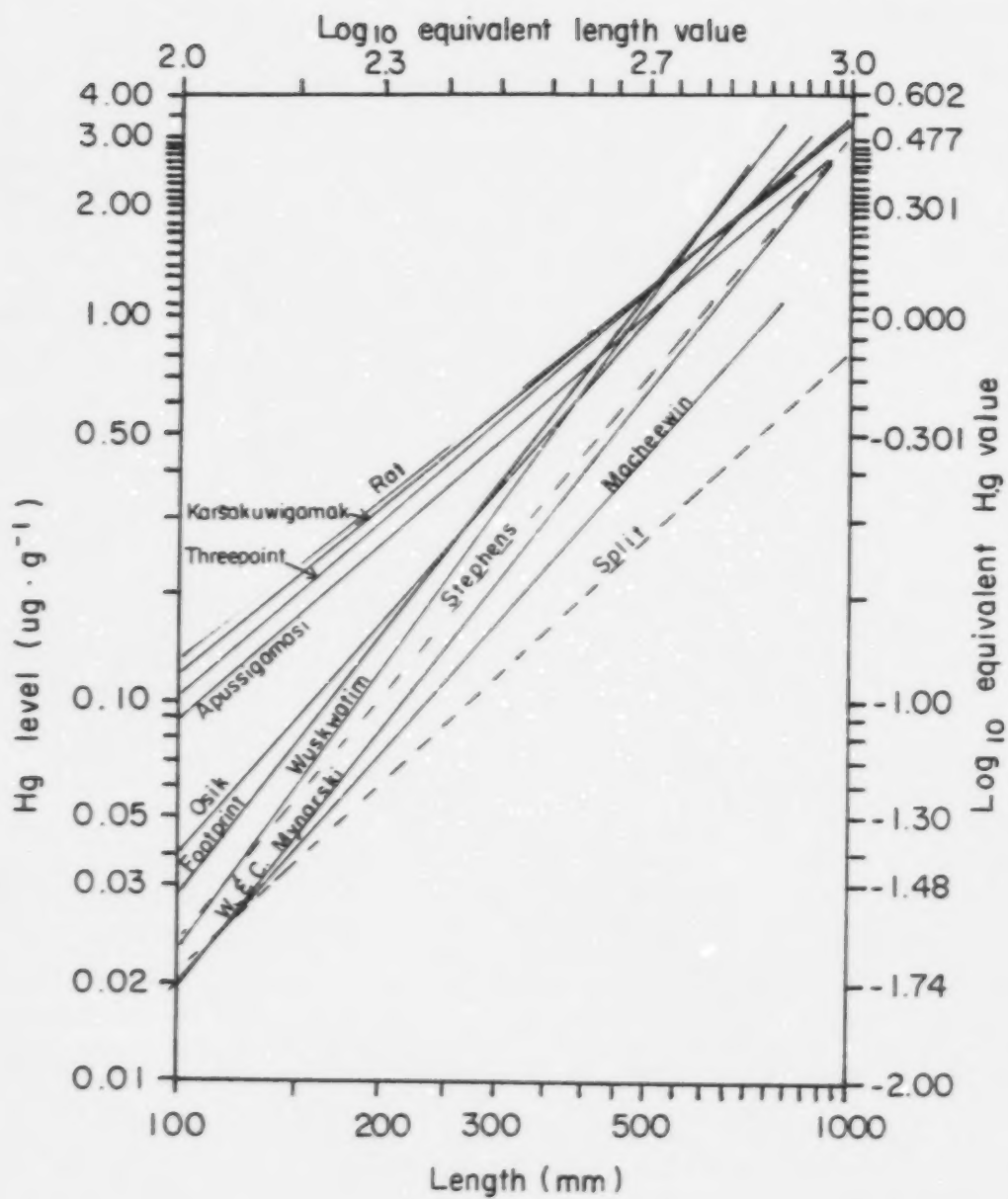
1984 walleye



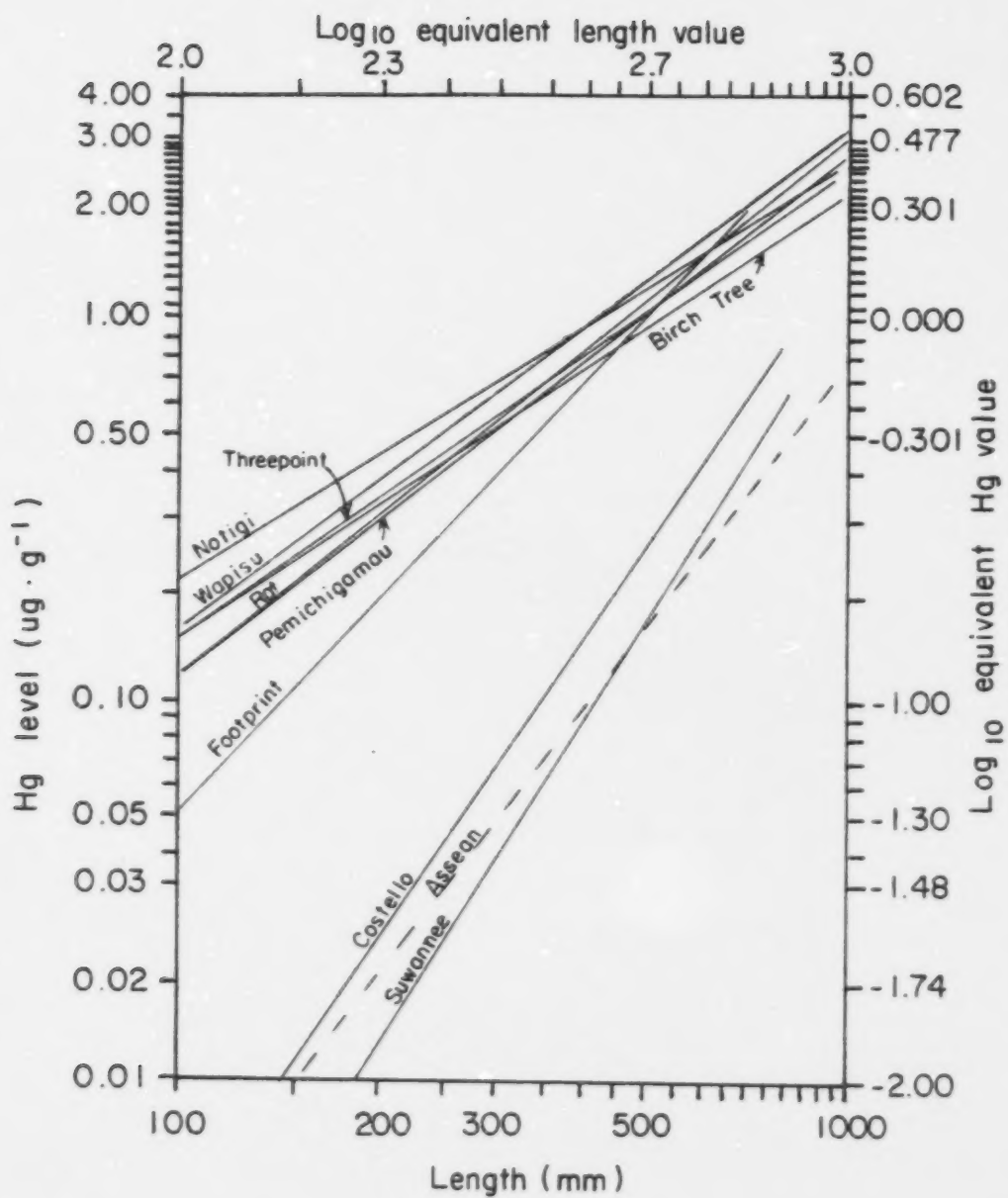
1985 walleye



1983 northern pike



1984 northern pike



1985 northern pike

Appendix 10. Analysis of covariance comparisons for whitefish, walleye and northern pike length vs Hg data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.

Whitefish.

Lake	Years of comparison	Slope		Elevation	
		d.f.	F value	d.f.	F value
Rat	1978-1985	1,54	0.0728	1,55	3.1911
	1978-1980	1,25	0.2233	1,26	0.8640
	1980-1983	1,43	1.2500	1,44	0.9548
	1983-1985	1,72	6.7740*	1,73	0.2694
Notigi	1980-1985	1,52	6.2807*	1,53	44.7645*
	1981-1985	1,84	6.3292*	1,85	5.4936*
	1981-1983	1,84	6.9954*	1,85	7.1524*
	1983-1985	1,96	0.2056	1,97	25.0073*
Wapisu	1983-1985	1,76	0.0540	1,77	10.4292*
Footprint	1980-1985	1,53	0.1839	1,54	4.3529*
	1981-1985	1,71	0.0681	1,72	4.4470*
	1981-1983	1,43	0.2784	1,44	2.3977
	1983-1985	1,74	1.0835	1,75	0.5492
Threepoint	1980-1985	1,54	1.6268	1,55	1.8670
	1981-1985	1,65	0.6182	1,66	0.3266
	1981-1983	1,37	1.6824	1,38	1.2900
	1983-1985	1,74	0.5474	1,75	0.6436
Split	1983-1984	1,53	1.9800	1,54	4.6184*
Stephens	1983-1984	1,56	1.6531	1,57	0.5541

* significantly different $P \leq 0.05$

Walleye.

Lake	Years of comparison	Slope		Elevation	
		d.f.	F value	d.f.	F value
West & Central Mynarski	1982-1984	1,78	2.7414	1,79	0.8179
	1982-1983	1,43	1.0445	1,44	9.4631*
	1983-1984	1,59	0.4733	1,60	20.1208*
Rat	1978-1985	1,76	3.0672	1,77	40.6342*
	1978-1980	1,44	5.9683*	1,45	75.0821*
	1980-1983	1,68	0.5623	1,69	75.2472*
	1983-1985	1,100	12.5724*	1,101	8.8044*
Notigi	1978-1985	1,40	0.1532	1,41	2.5237
	1978-1981	1,44	0.3733	1,45	13.0639*
	1981-1983	1,51	5.5999*	1,52	9.6857*
	1983-1985	1,47	2.1560	1,48	4.2630*
Wapisiu	1977-1985	1,151	0.0075	1,152	35.3254*
	1977-1983	1,137	0.6817	1,138	9.5816*
	1983-1985				
Macheewin	1981-1984	1,46	6.6955*	1,47	18.7108*
	1981-1982	1,8	5.1356	1,9	2.1440
	1982-1984	1,46	0.7049	1,47	34.9531*
Osik	1982-1984	1,53	0.8671	1,54	0.7445
	1982-1983	1,14	0.1028	1,15	4.1372
	1983-1984	1,59	1.7379	1,60	1.9165
Footprint	1978-1985	1,73	0.3710	1,74	5.7592*
	1978-1981	1,46	0.0816	1,47	9.3486*
	1981-1983	1,59	1.9670	1,60	1.0158
	1983-1985	1,86	0.1284	1,87	1.8287
Threepoint	1981-1985	1,97	5.8594*	1,98	13.0626*
	1981-1983	1,88	6.6073*	1,89	7.2276*
	1983-1985	1,105	0.1602	1,106	40.1379*
Wuskwatim	1979-1984	1,110	2.4423	1,111	15.6009*
	1979-1981	1,87	0.9860	1,88	0.0040
	1981-1984	1,87	3.4491	1,88	15.1383*
Apussigamasi	1982-1984	1,55	0.0632	1,56	0.4186
Sipiweak	1972-1983	1,106	21.6372*	1,107	2.8491
	1972-1974	1,72	1.6866	1,73	11.2126*
	1974-1976	1,83	0.8712	1,84	19.5617*
	1976-1978	1,108	0.1079	1,109	2.0141
	1978-1980	1,88	9.3811*	1,89	0.3669
	1980-1983	1,97	55.5786*	1,98	5.5863*
Split	1972-1984	1,94	6.4456*	1,95	0.00005
	1972-1974	1,45	1.1320	1,46	0.0376
	1974-1976	1,62	0.6943	1,63	8.0113*
	1976-1978	1,109	0.8630	1,110	3.4706
	1978-1980	1,77	5.7178*	1,78	2.6655
	1980-1982	1,24	7.8768*	1,25	26.8117*
	1982-1984	1,77	2.4567	1,78	24.7445*
Stephens	1983-1984	1,70	0.0644	1,71	24.0198*

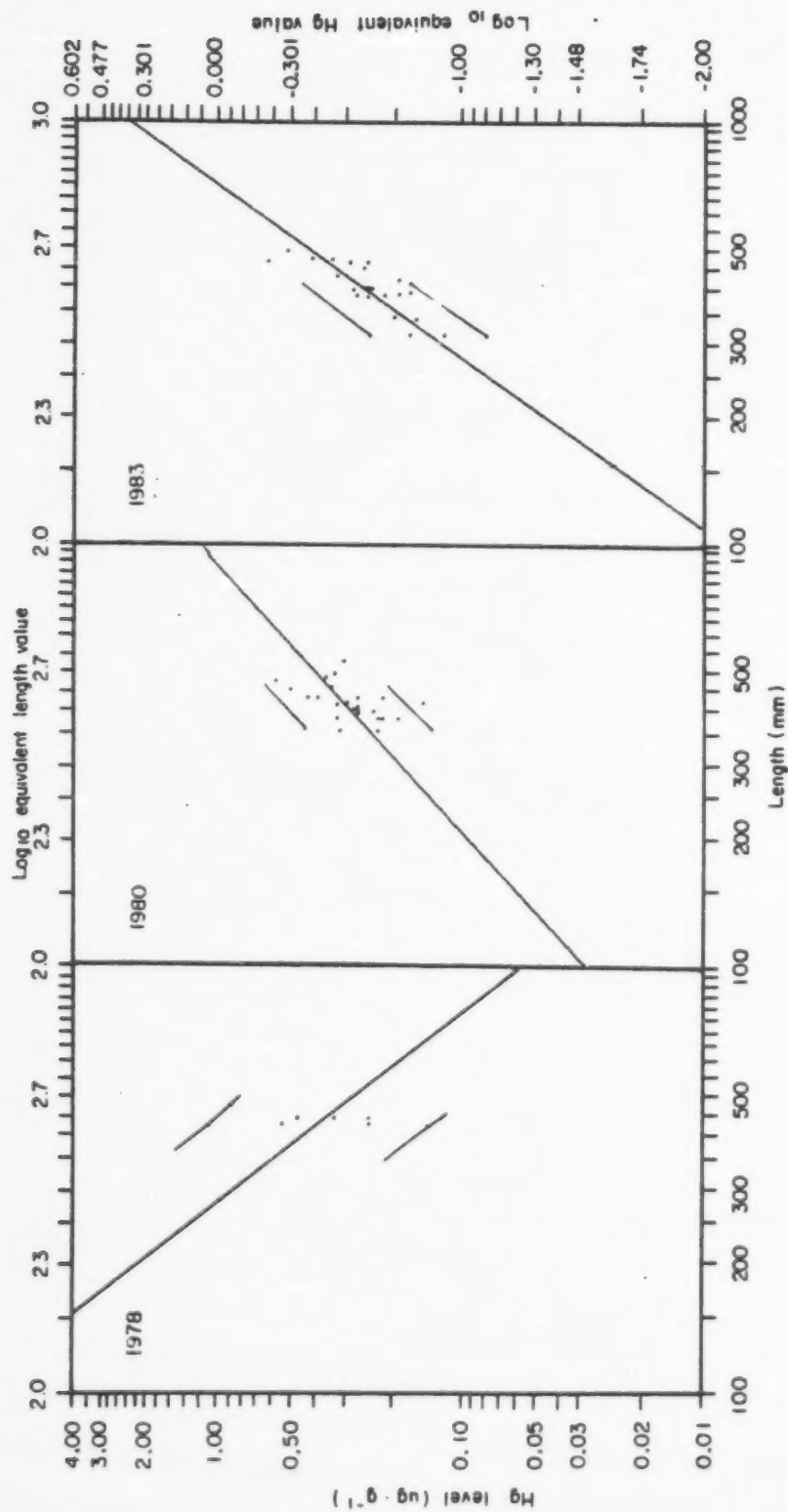
* significantly different $P \leq 0.05$

Pike.

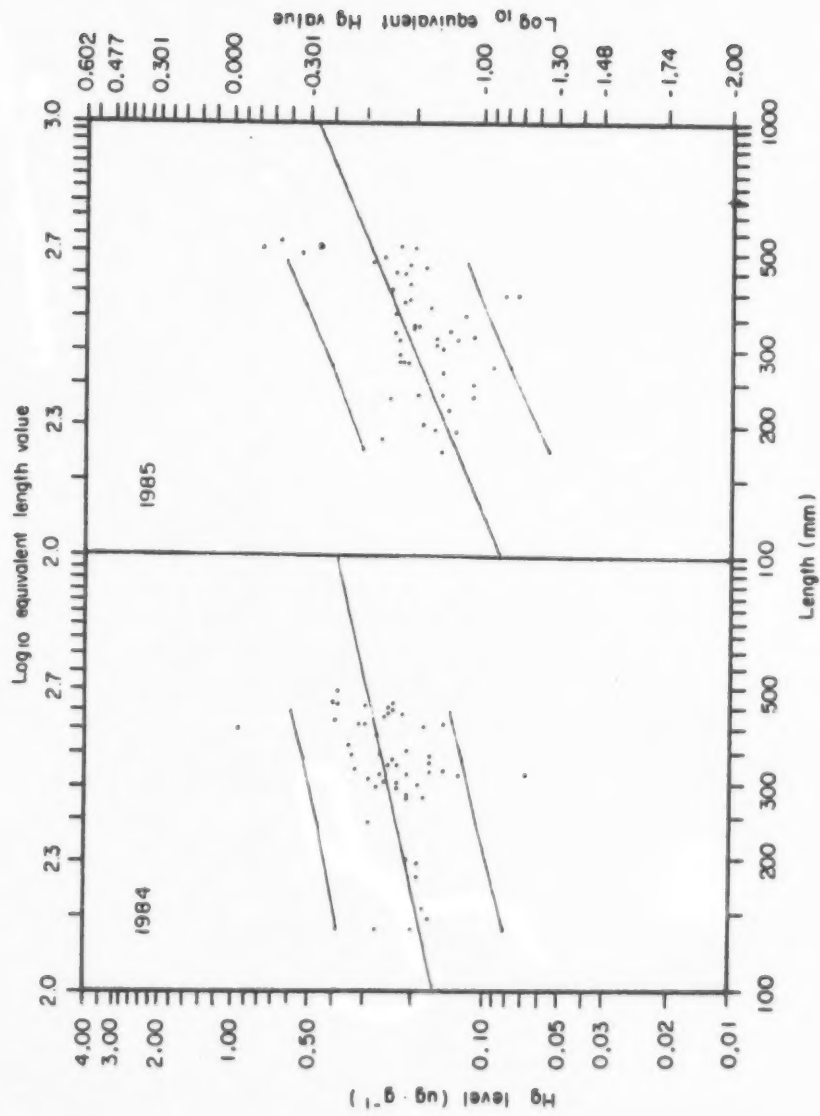
Lake	Years of comparison	Slope		Elevation	
		d.f.	F value	d.f.	F value
West & Central Mynarski	1982-1984	1,59	34.1430*	1,60	9.7913*
	1982-1983	1,13	0.7873	1,14	0.1985
	1983-1984	1,52	2.9862	1,53	67.5764*
Rat	1978-1985	1,78	21.2876*	1,79	20.495*
	1978-1983	1,42	1.6382	1,43	10.3311*
	1983-1985	1,76	1.7871	1,77	0.3140
Notigi	1980-1985	1,56	1.2877	1,57	0.5124
	1980-1981	1,51	1.1958	1,52	6.8007*
	1981-1983	1,90	1.4358	1,91	11.2405*
	1983-1985	1,95	8.5300*	1,96	2.4918
Wapiau	1977-1985	1,75	1.1314	1,76	60.2601*
	1977-1983	1,87	3.1204	1,88	65.5820*
	1983-1985	1,90	5.2730*	1,91	0.2607
Macheewin	1981-1984	1,58	1.1938	1,59	21.3330*
	1981-1982	1,11	1.9621	1,12	9.5892*
	1982-1984	1,63	1.6239	1,64	0.4768
Osik	1982-1984	1,61	0.5365	1,62	10.0903*
	1982-1983	1,6	0.0002	1,7	0.2001
	1983-1984	1,61	0.2989	1,62	3.6941
Footprint	1978-1985	1,62	2.4687	1,63	8.9590*
	1978-1981	1,28	0.9407	1,29	30.5528*
	1981-1983	1,51	0.2549	1,52	1.7289
	1983-1985	1,85	3.5263	1,86	8.8452*
Thraepoint	1981-1985	1,73	0.0004	1,74	1.4341
	1981-1983	1,74	0.4248	1,75	8.5963*
	1983-1985	1,95	2.6519	1,96	19.9625*
Wuskwatim	1979-1984	1,89	29.9887*	1,90	23.0318*
	1979-1981	1,76	2.6750	1,77	0.0289
	1981-1984	1,59	2.3035	1,60	24.4152*
Apussiganasi	1982-1984	1,60	0.0681	1,61	23.4966*
Sipiwek	1972-1983	1,194	7.1279*	1,195	13.9780*
	1972-1974	1,170	0.0920	1,171	1.2537
	1974-1976	1,172	0.9539	1,173	4.2328*
	1976-1979	1,183	0.0546	1,184	0.8206
	1979-1981	1,105	23.9838*	1,106	0.7554
	1981-1983	1,136	4.6539*	1,137	8.0930*
Split	1972-1984	1,82	6.3652*	1,83	126.9511*
	1972-1973	1,93	0.2029	1,94	2.8912
	1973-1976	1,130	1.5766	1,131	1.6306
	1976-1978	1,102	0.0094	1,103	3.5519
	1978-1981	1,26	0.0613	1,27	8.5183*
	1981-1982	1,40	1.9149	1,41	2.5234
	1982-1984	1,71	0.4300	1,72	33.5970*
Stephens	1983-1984	1,85	0.0552	1,86	8.8533*

* significantly different $P \leq 0.05$

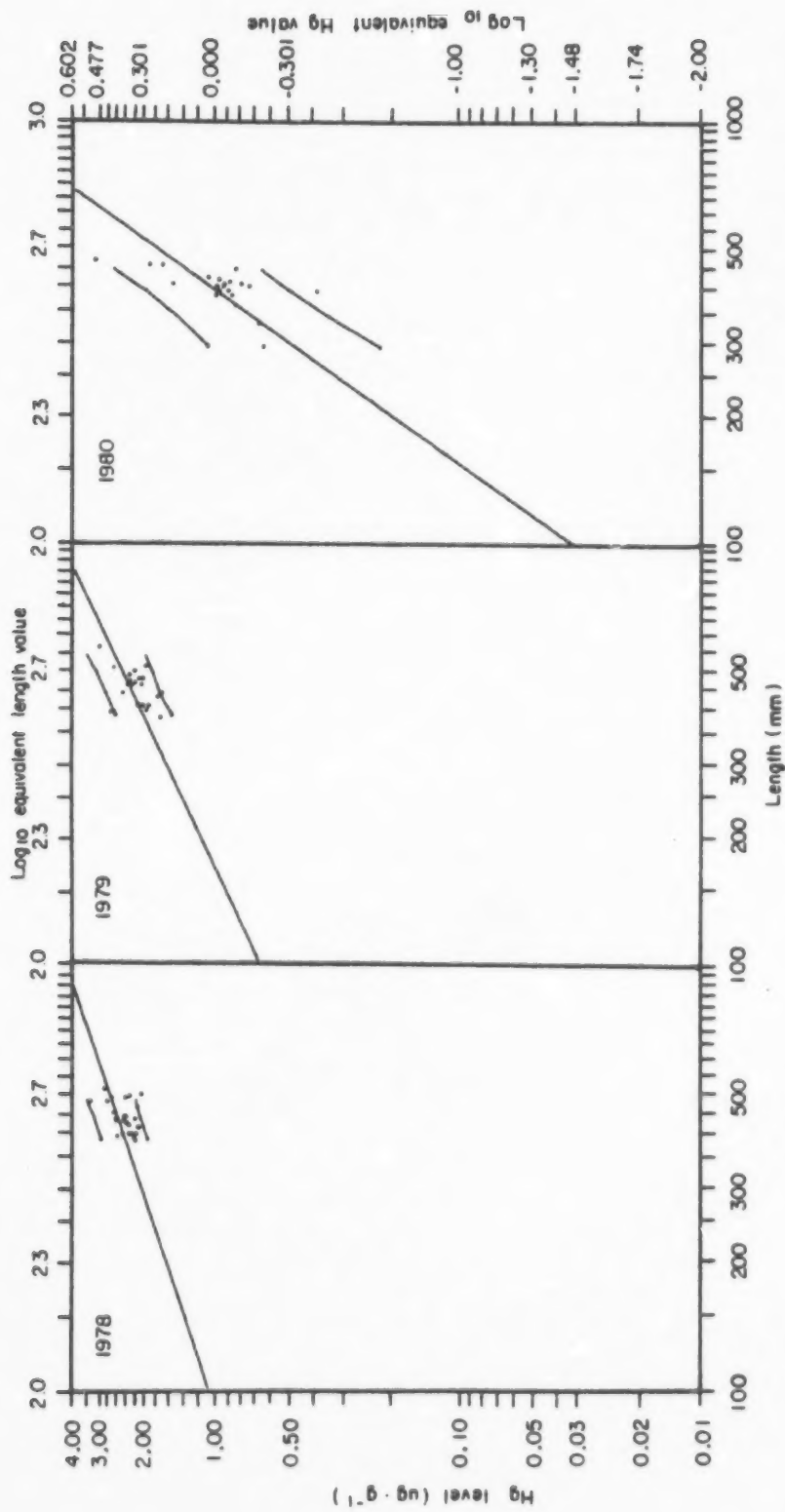
Appendix 11. Distribution of length vs muscle Hg data points relative to the 95% confidence interval about the log regression lines for selected lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985. Equations for the regression lines are presented in Appendix 8 for only the 1983 - 1985 data.



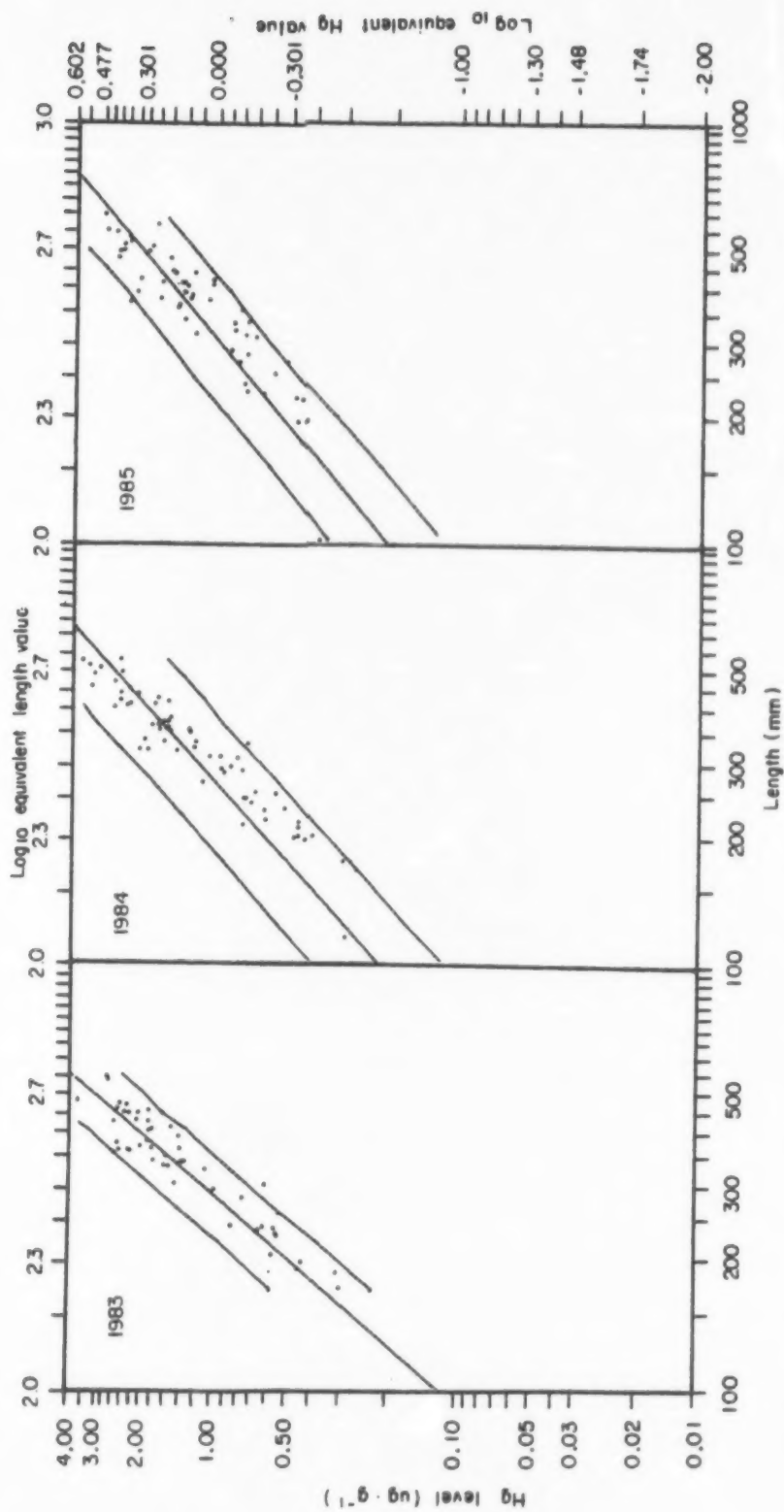
Rat Lake whitefish.



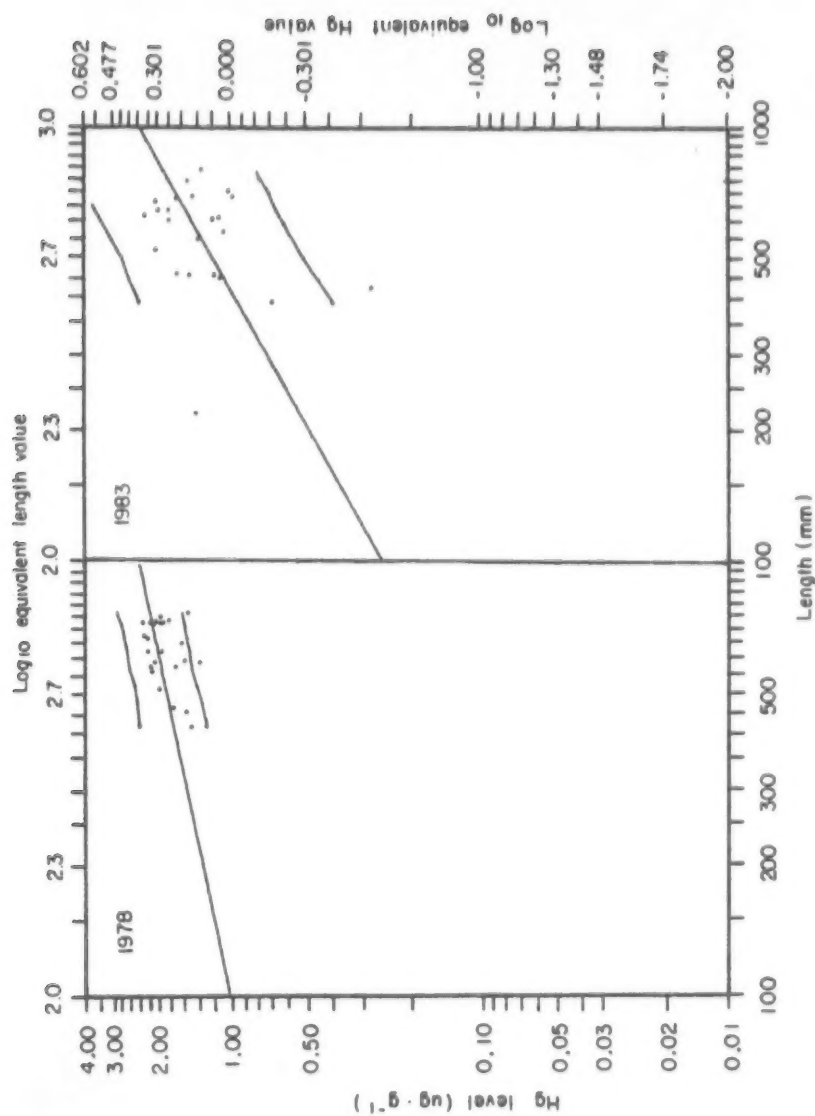
Rat Lake whitefish.



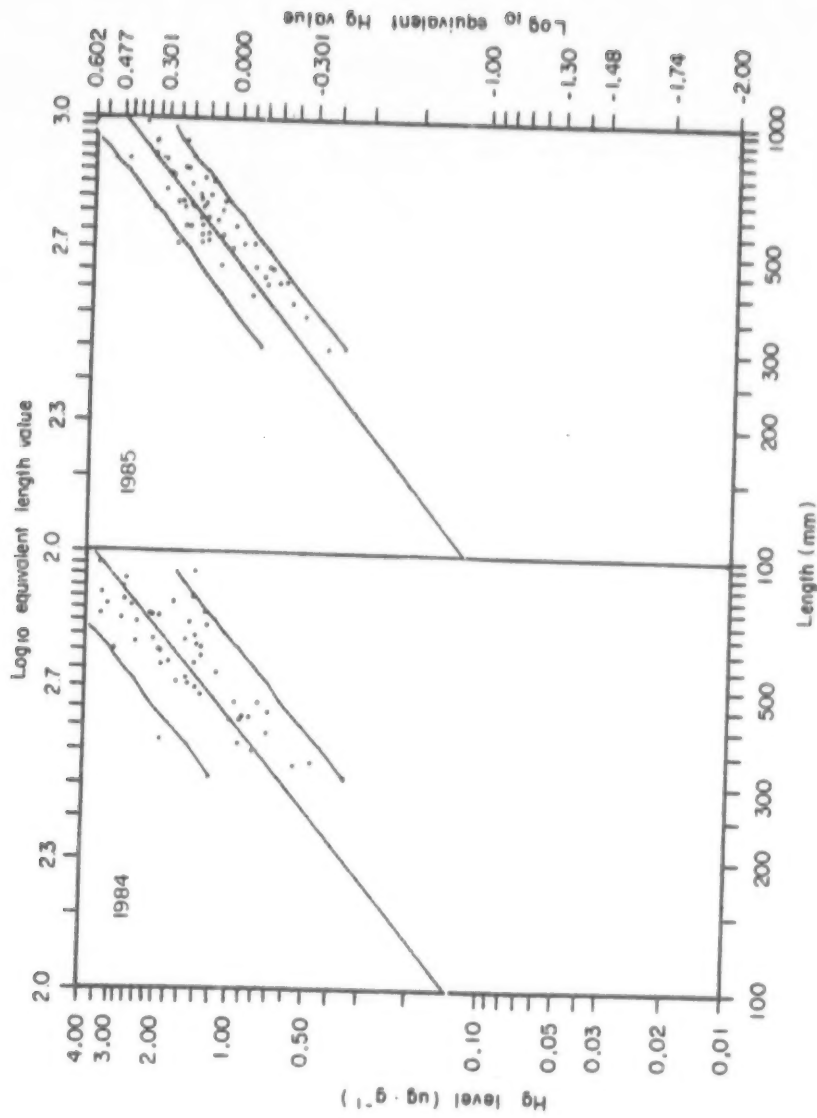
Rat Lake walleye.



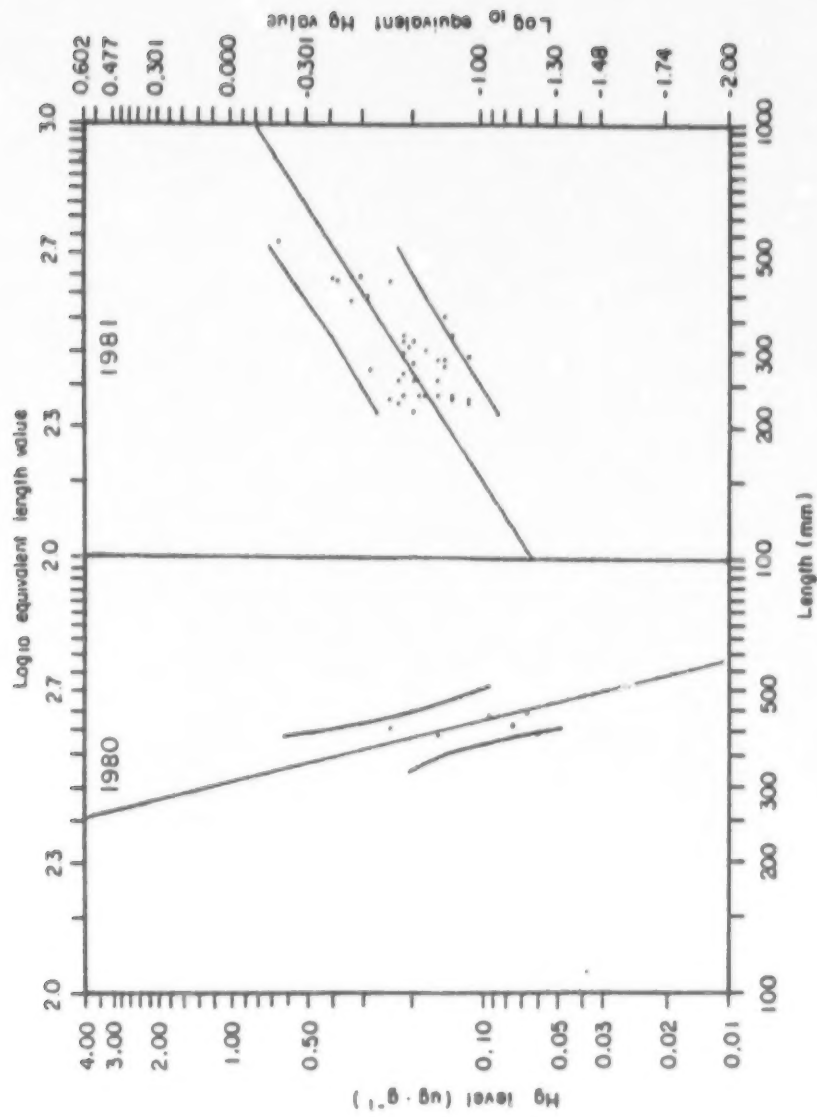
Rat Lake walleye.



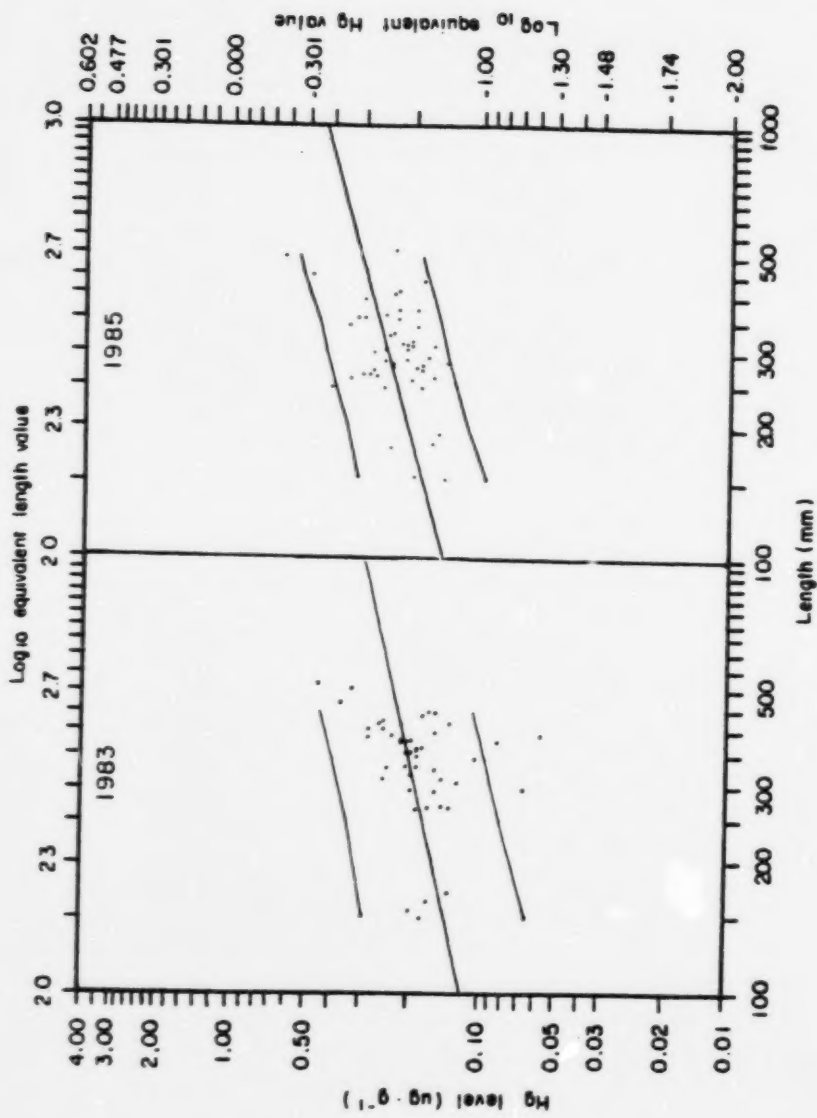
Rat Lake pike.



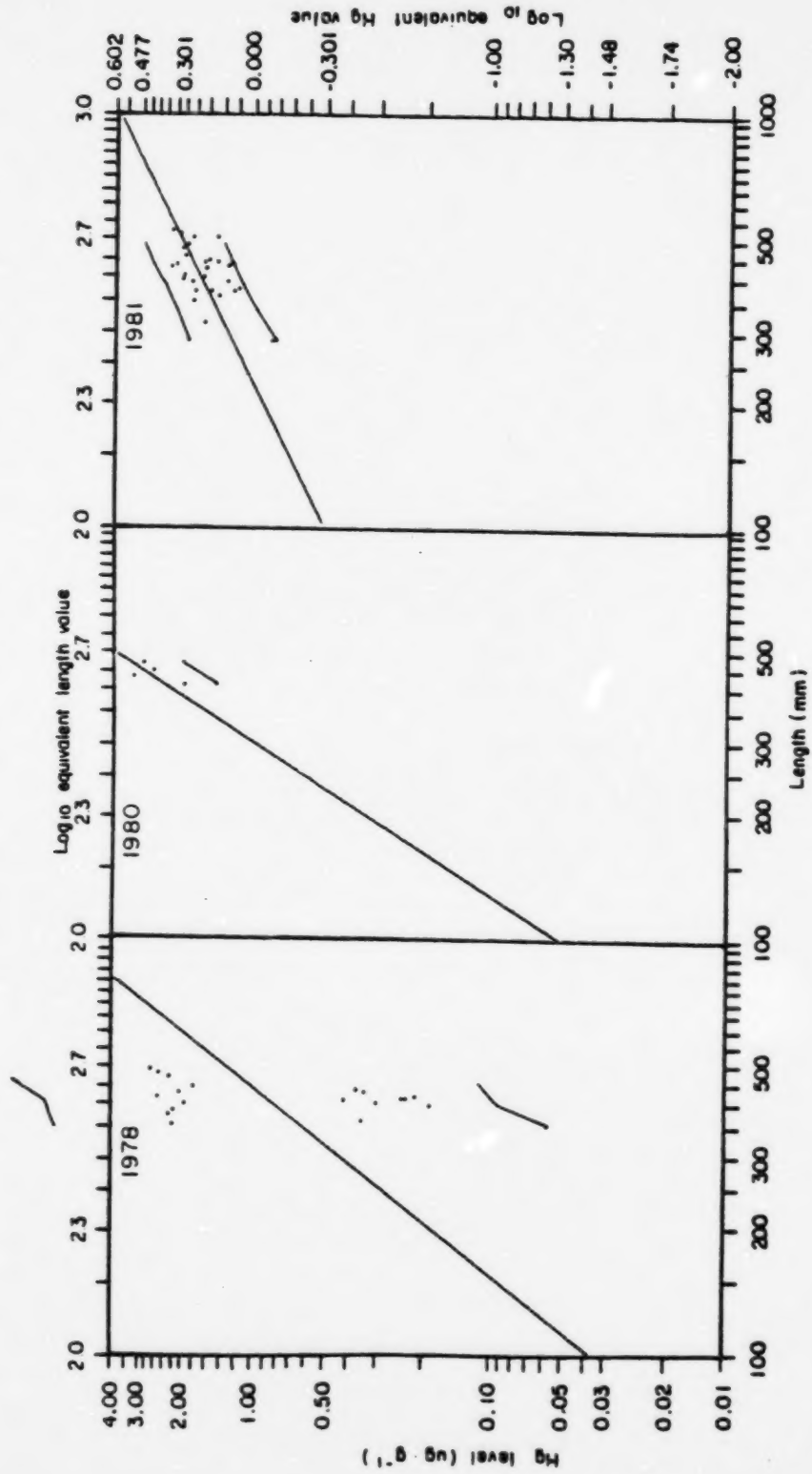
Rat Lake pike.



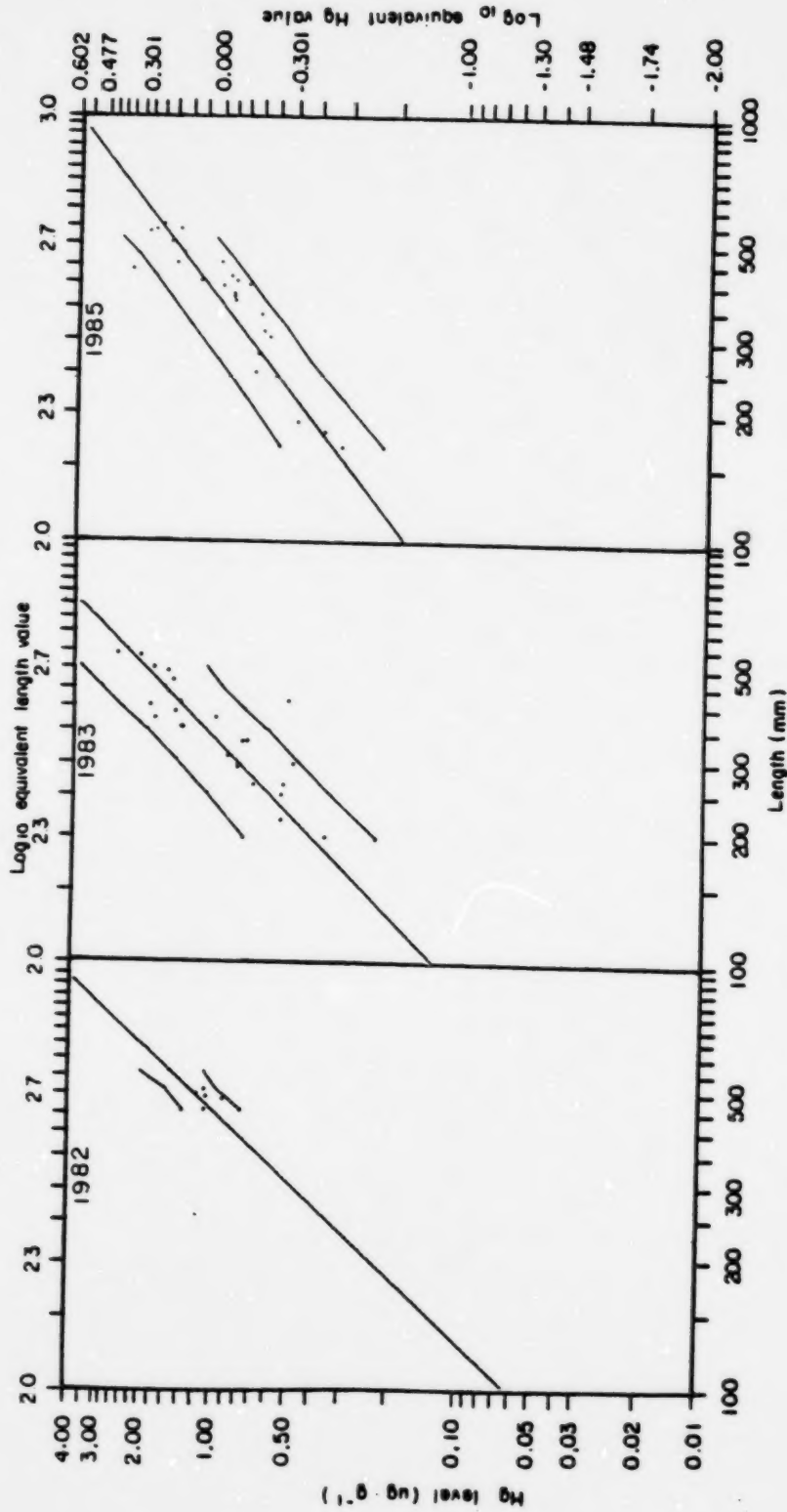
Notiqi Lake whitefish.



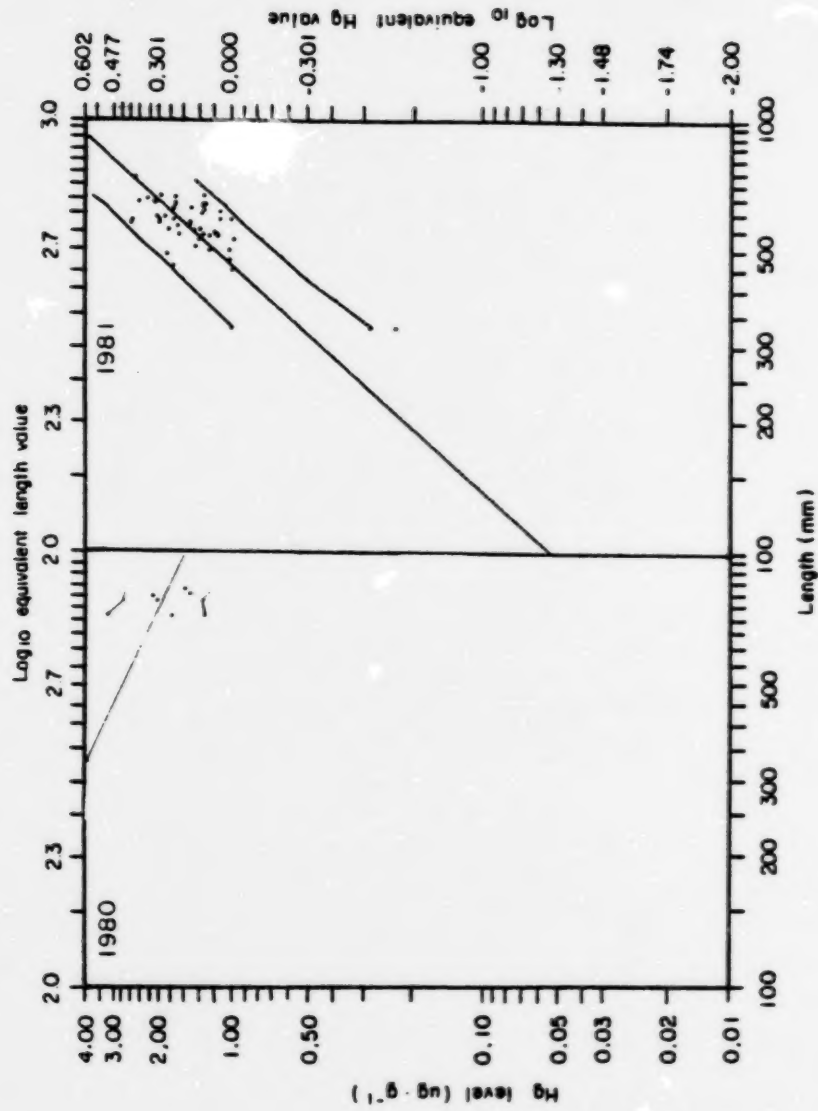
Notigi Lake whitefish.



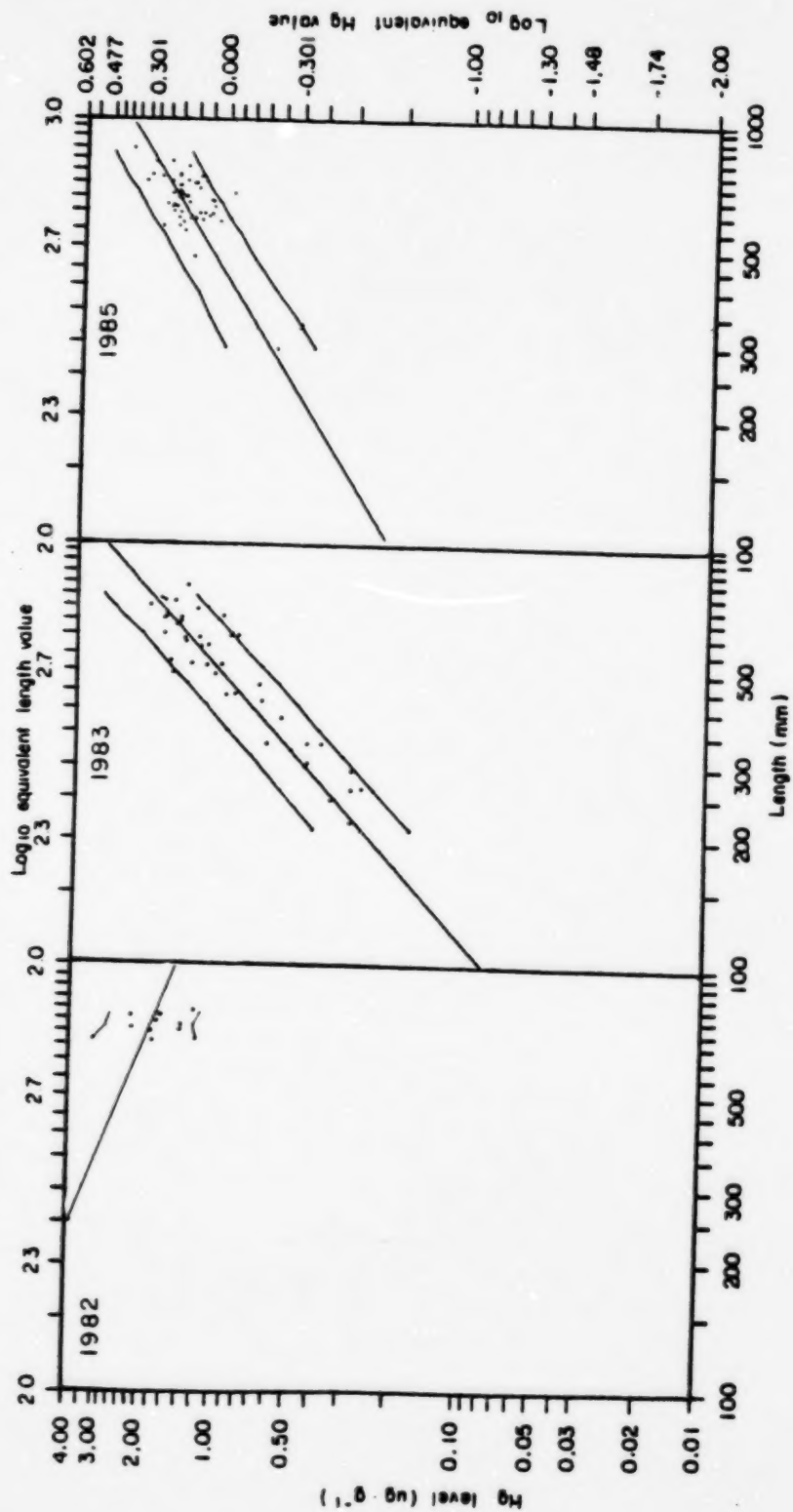
Notigi Lake walleye.



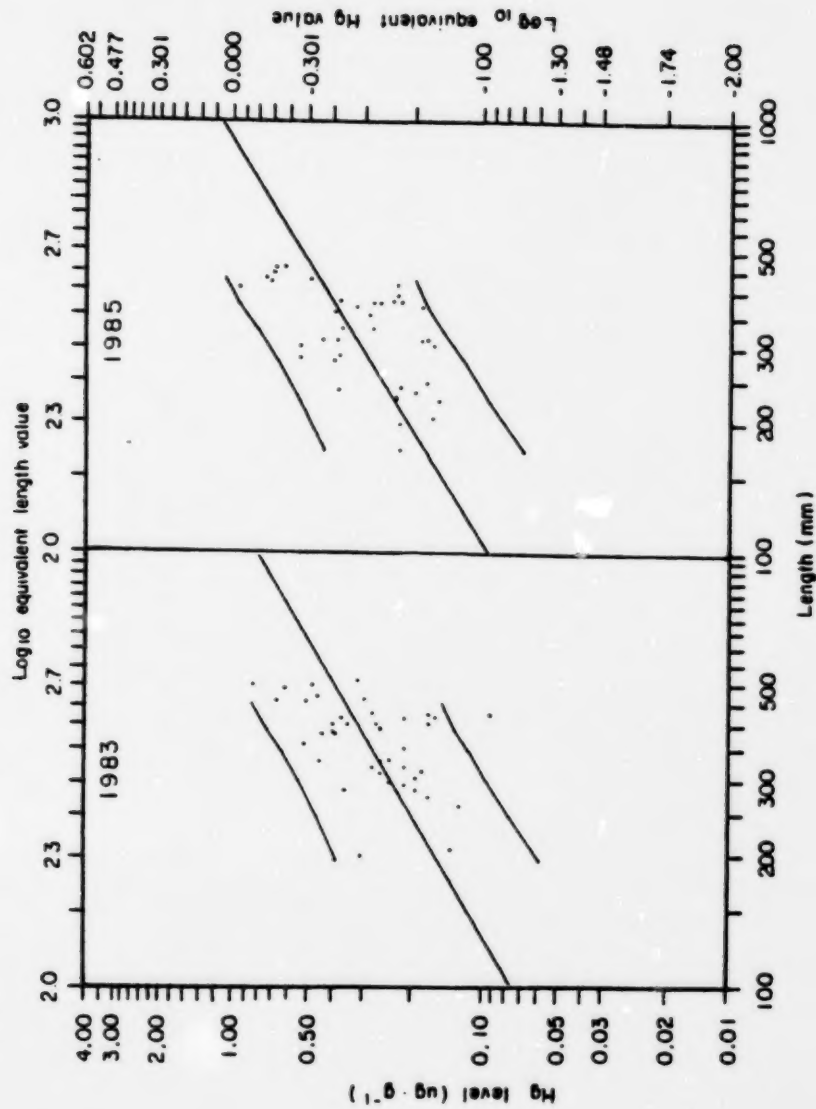
Notigi Lake walleye.



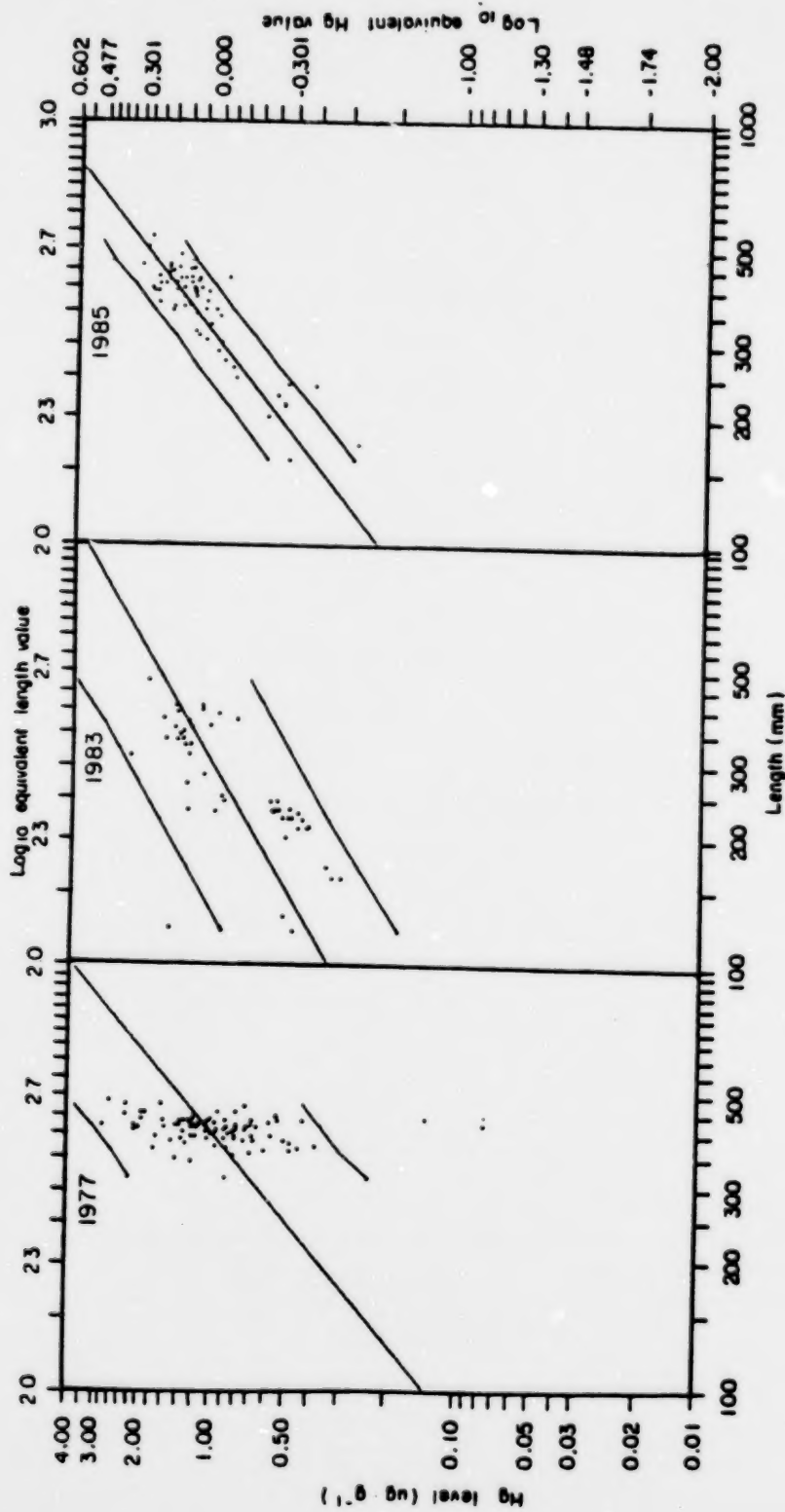
Notigi Lake northern pike.



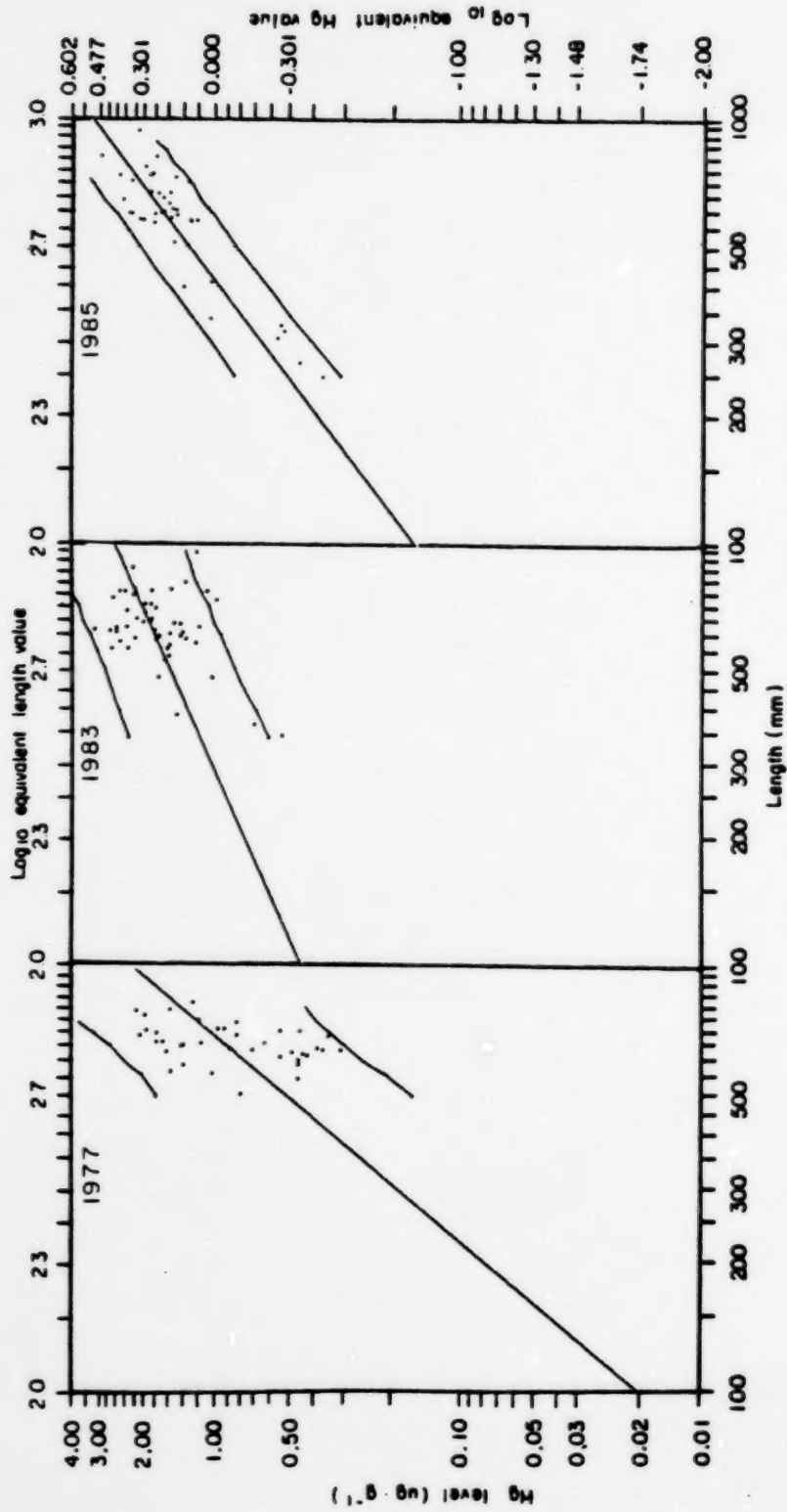
Notigi Lake northern pike.



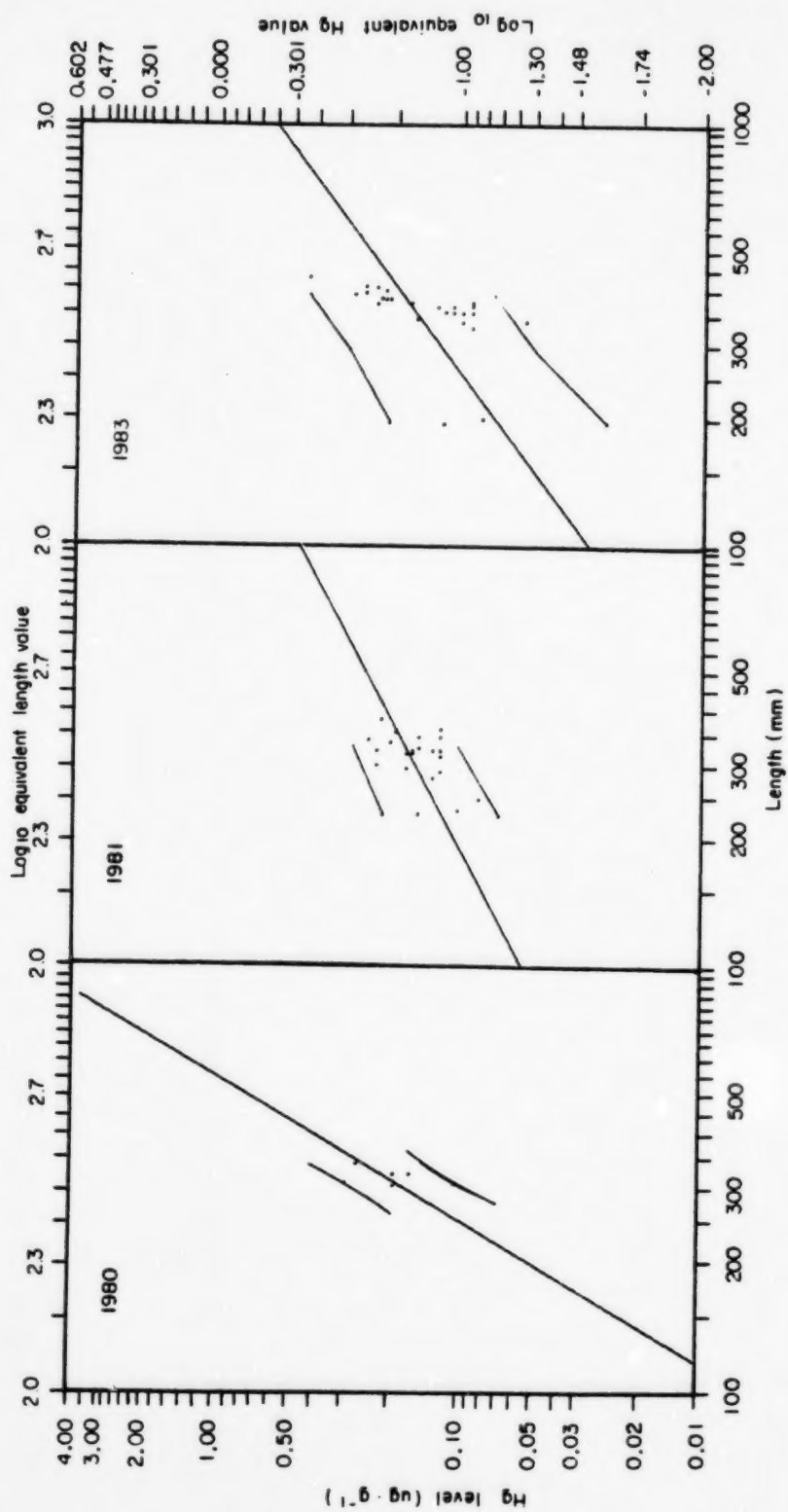
Wapitu Lake whitefish.



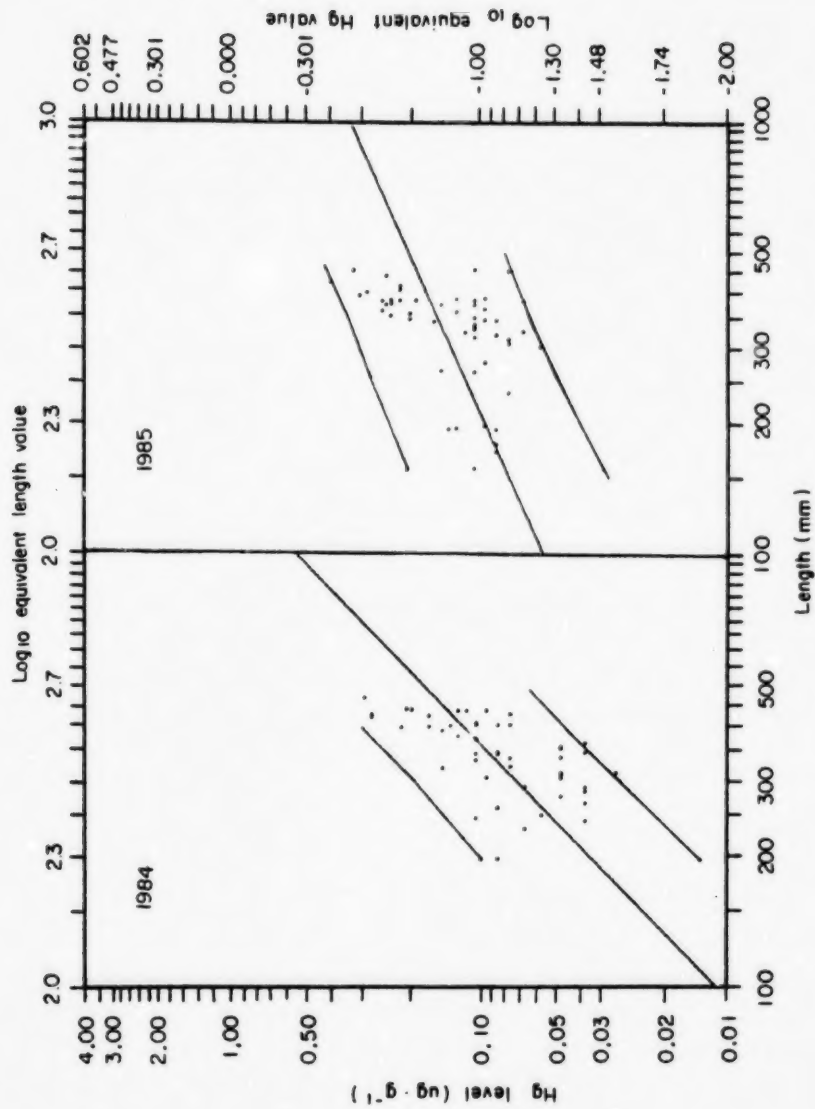
Wapitu Lake walleye



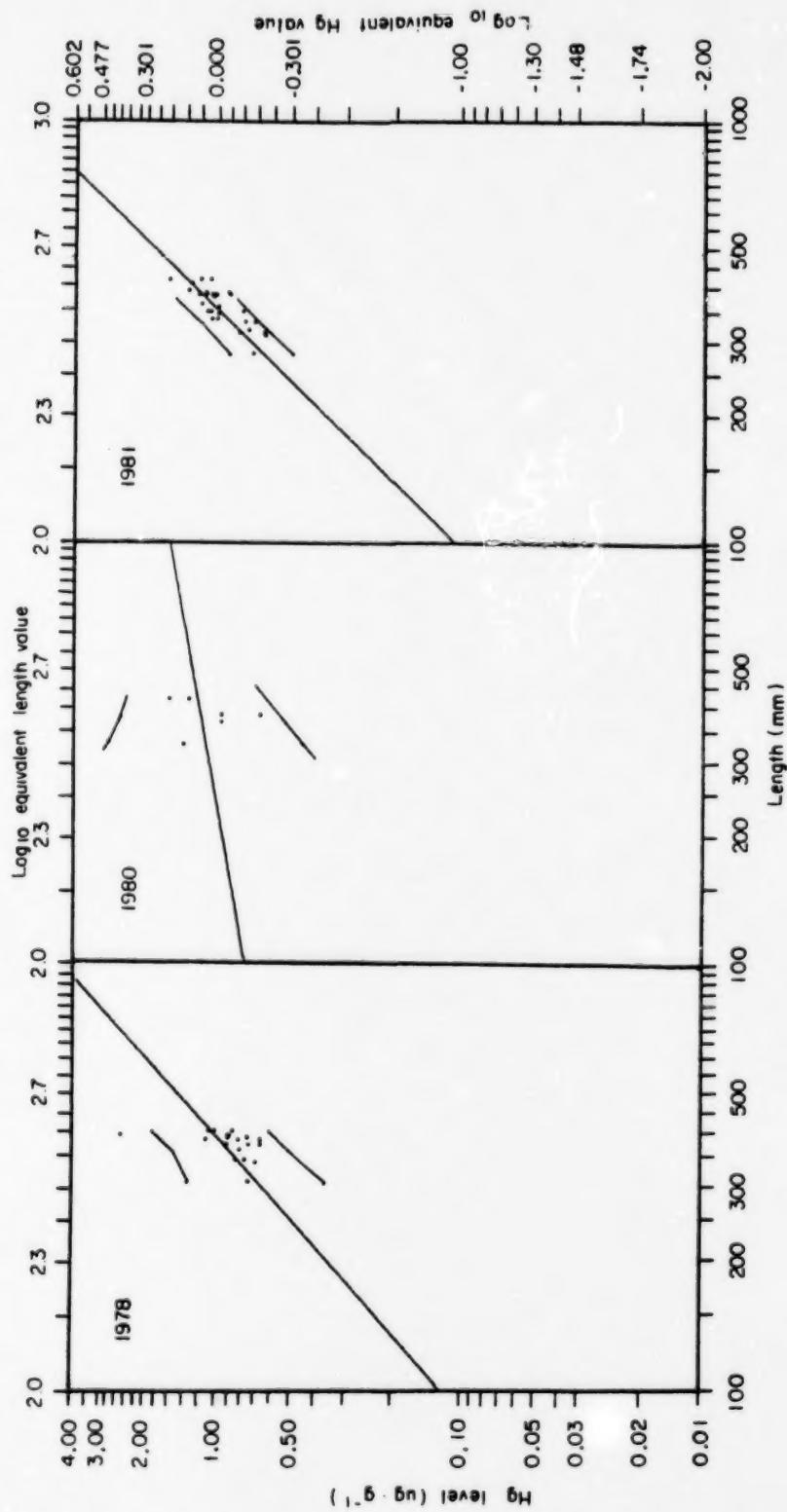
Wapitu Lake northern pike.



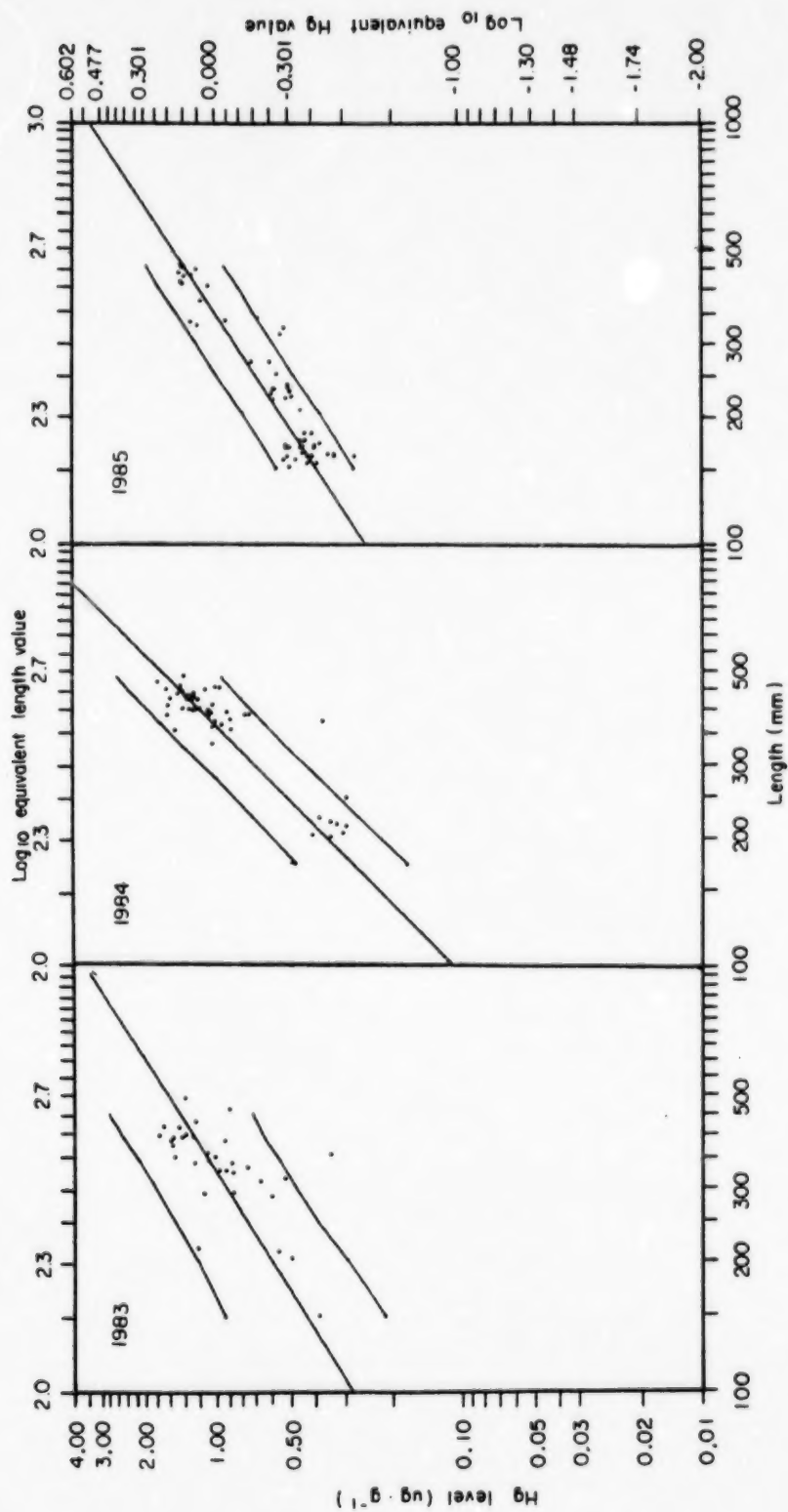
Footprint whitefish.



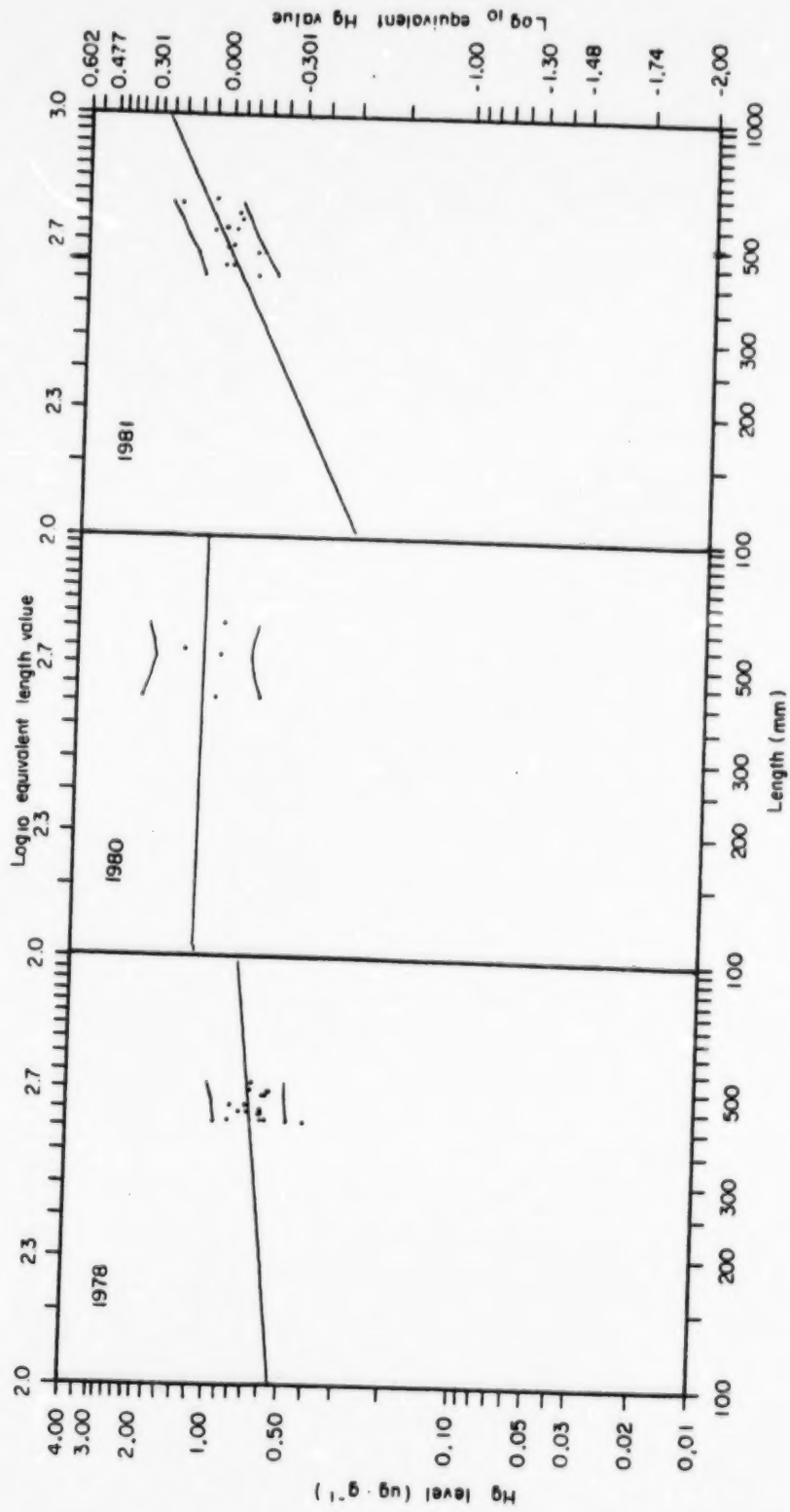
Footprint Lake whitefish.



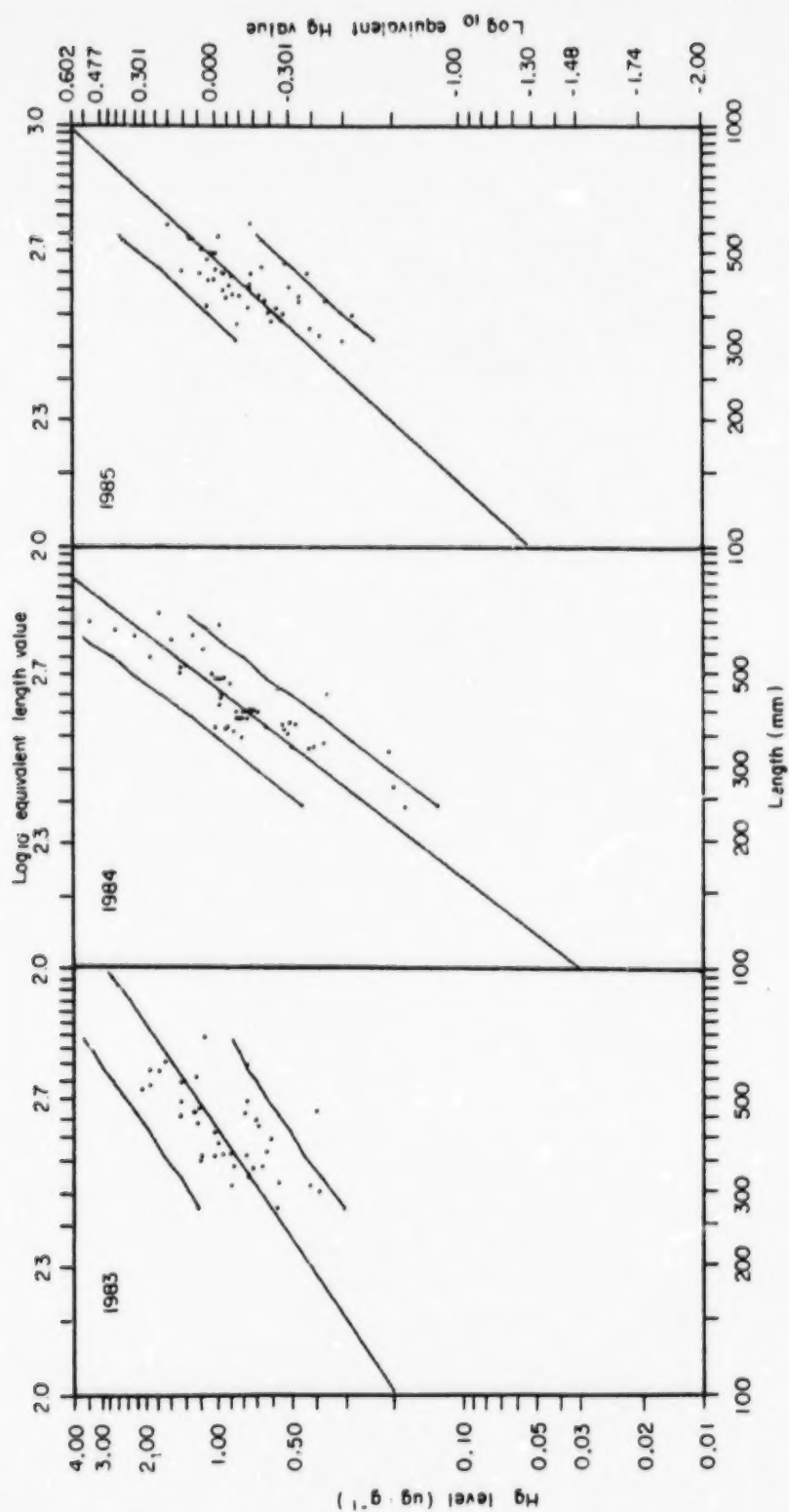
Footprint Lake walleye.



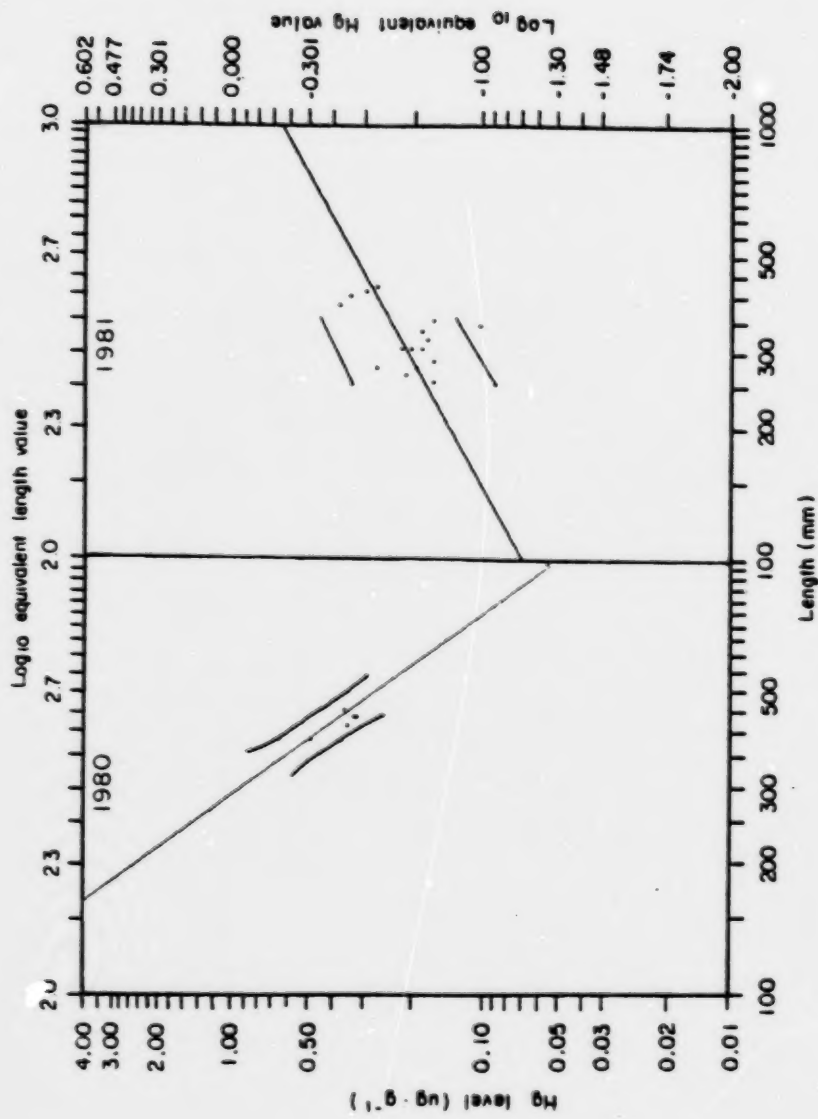
Footprint Lake walleye.



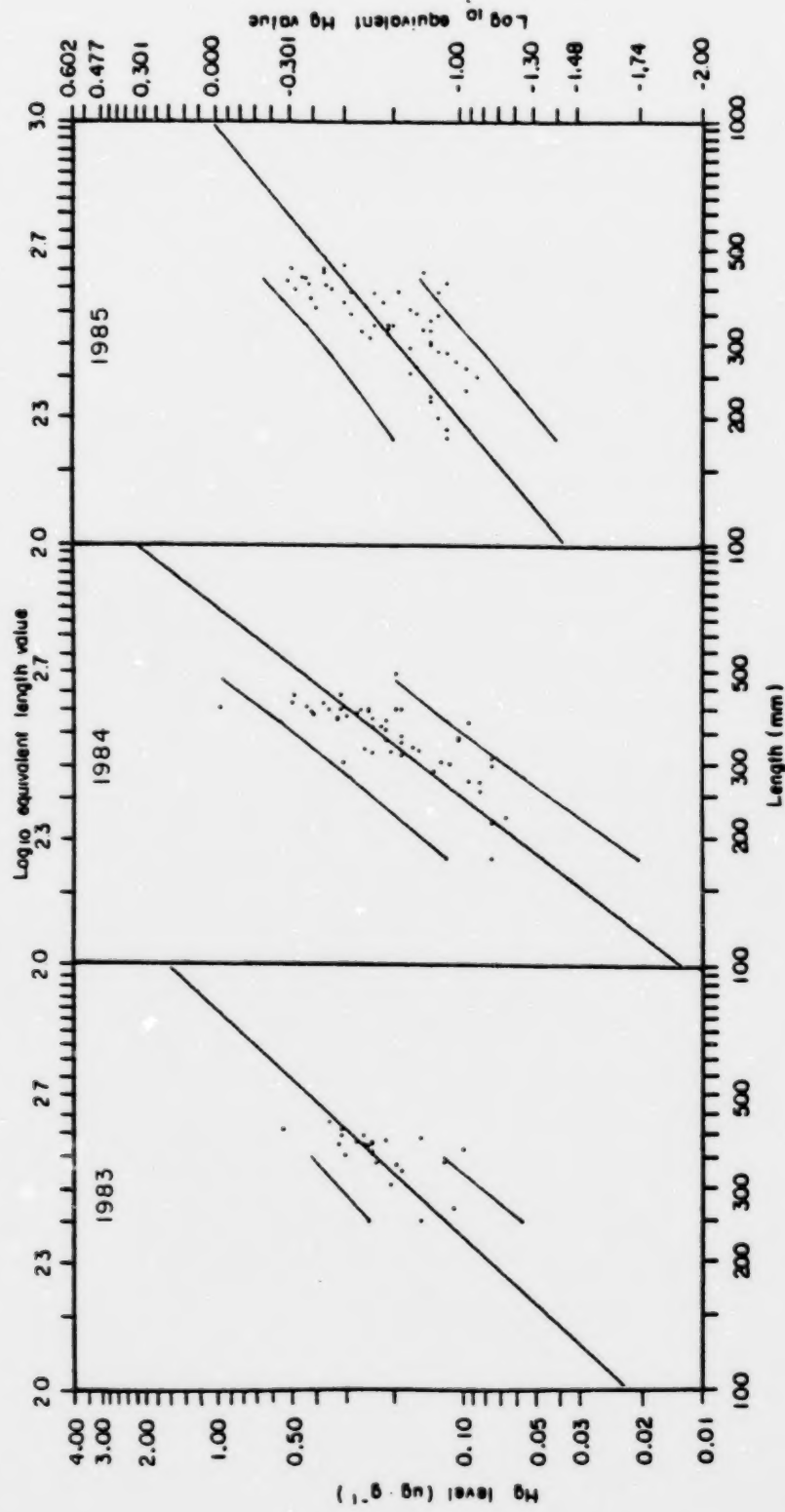
Footprint Lake northern pike.



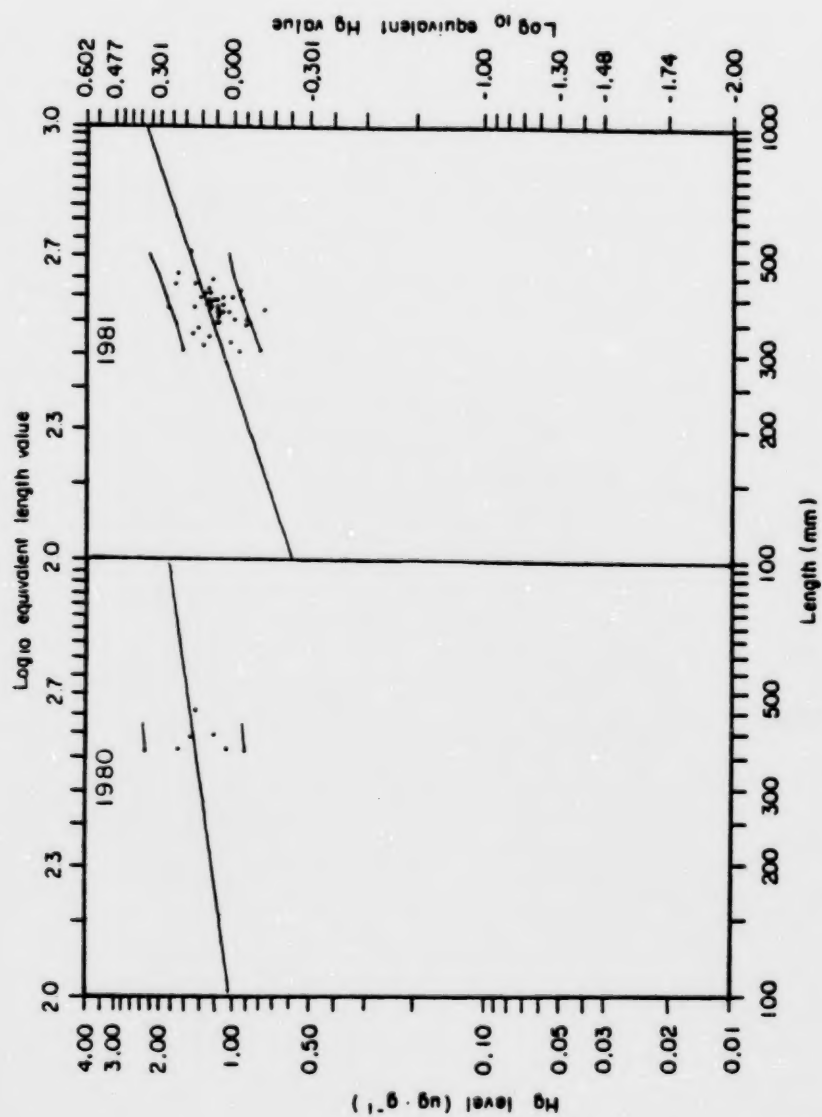
Footprint Lake northern pike.



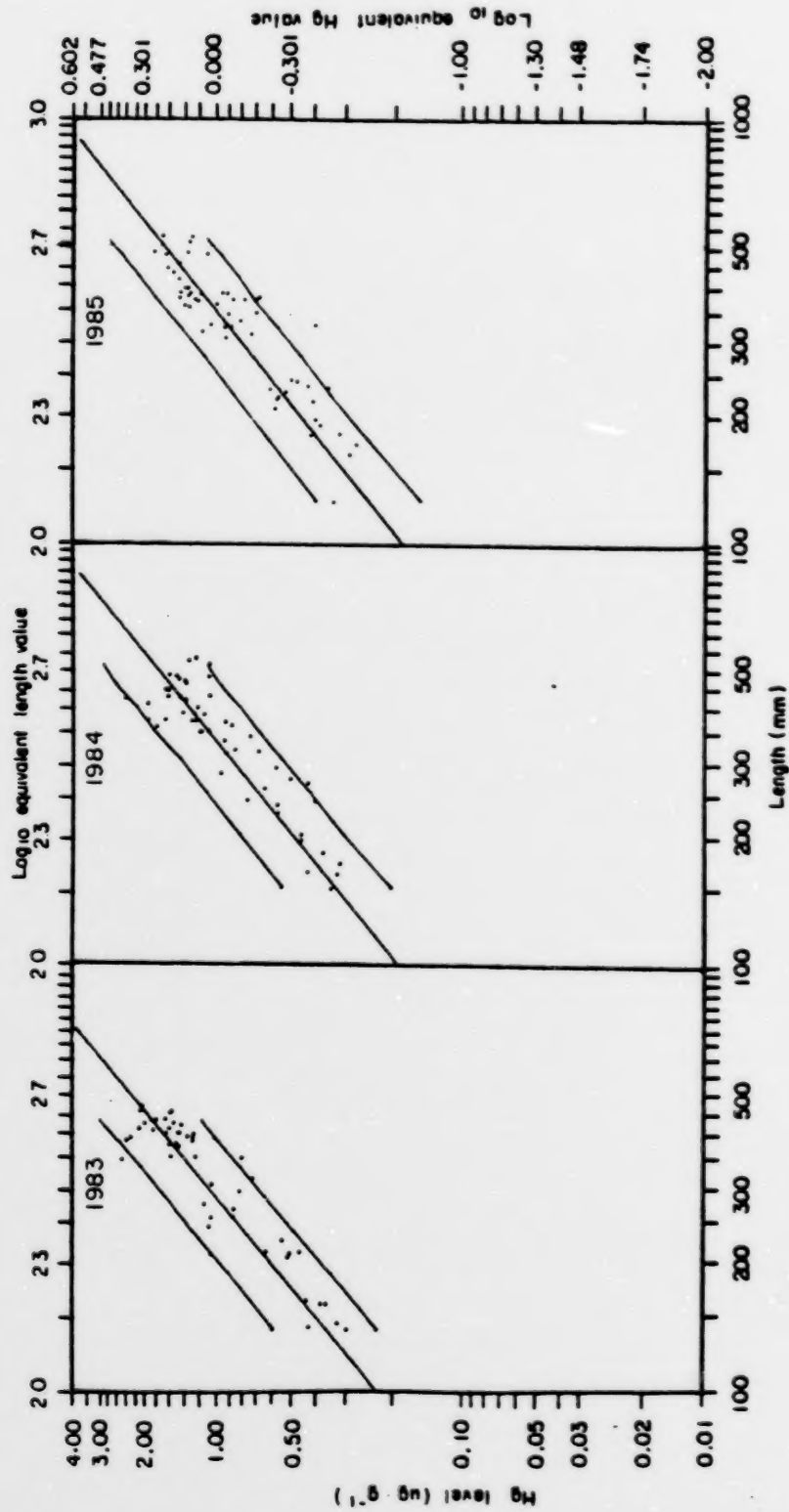
Threepoint Lake whitefish.



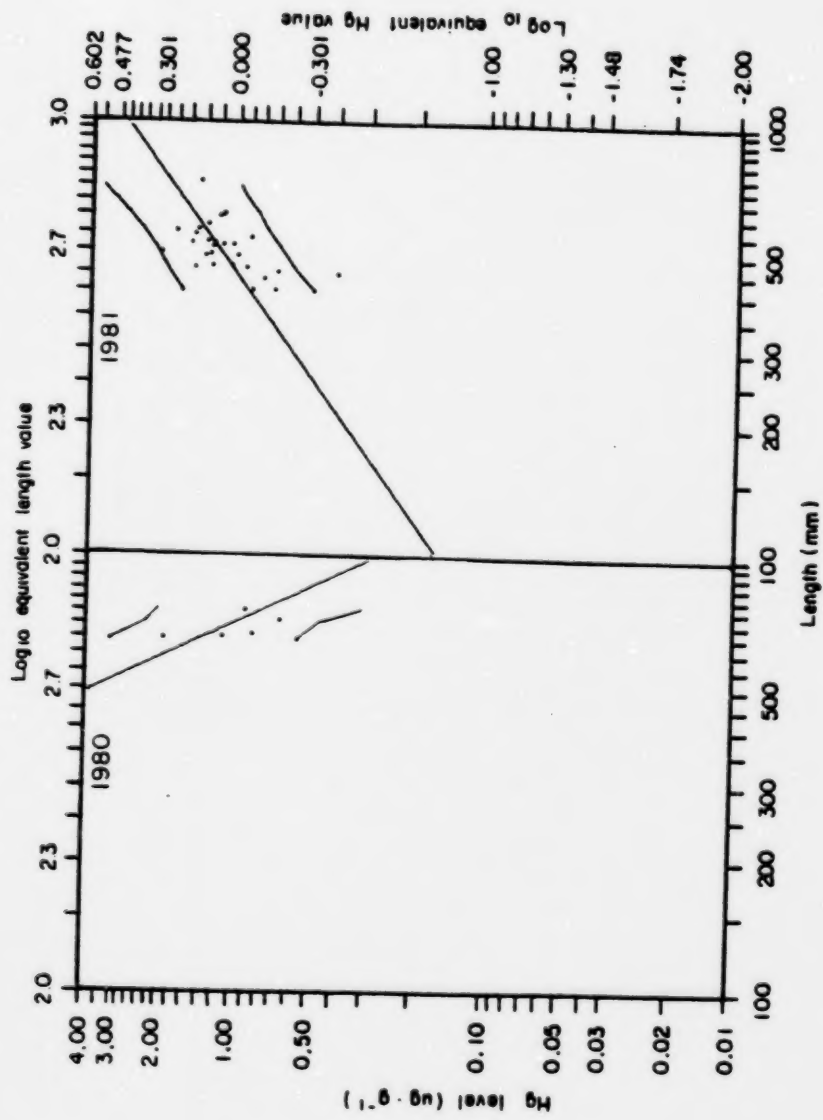
Threepoint Lake whitefish.



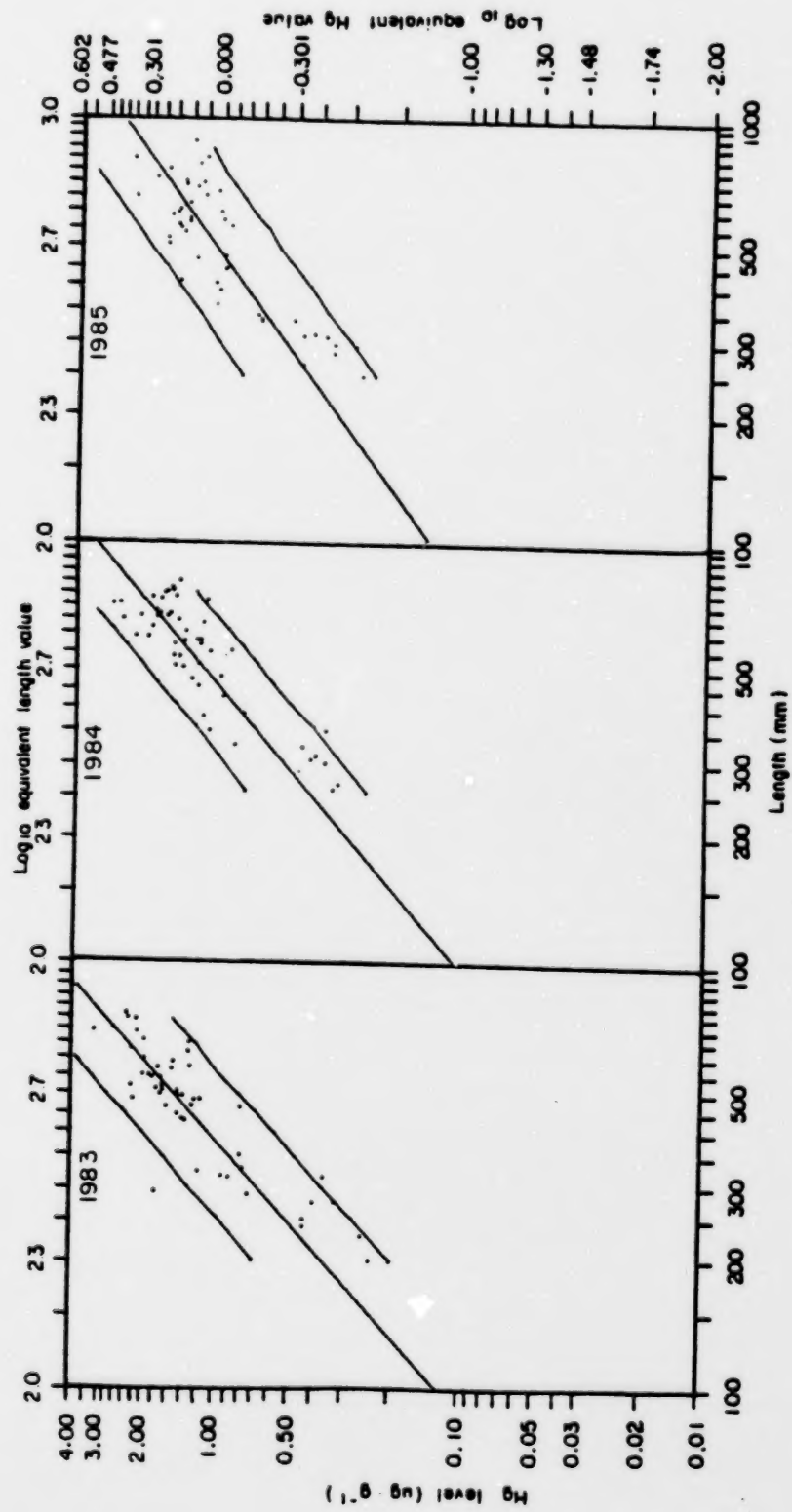
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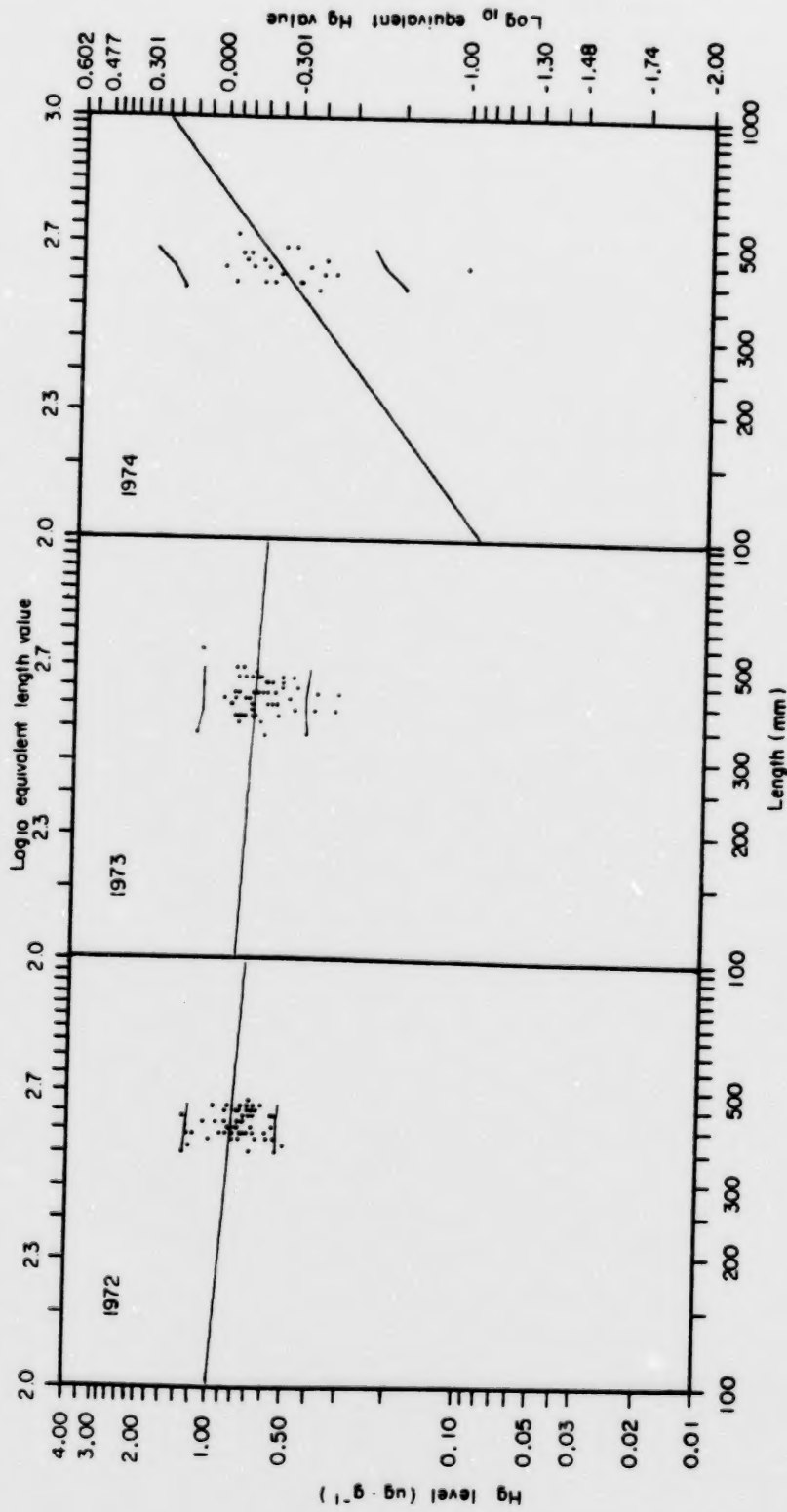
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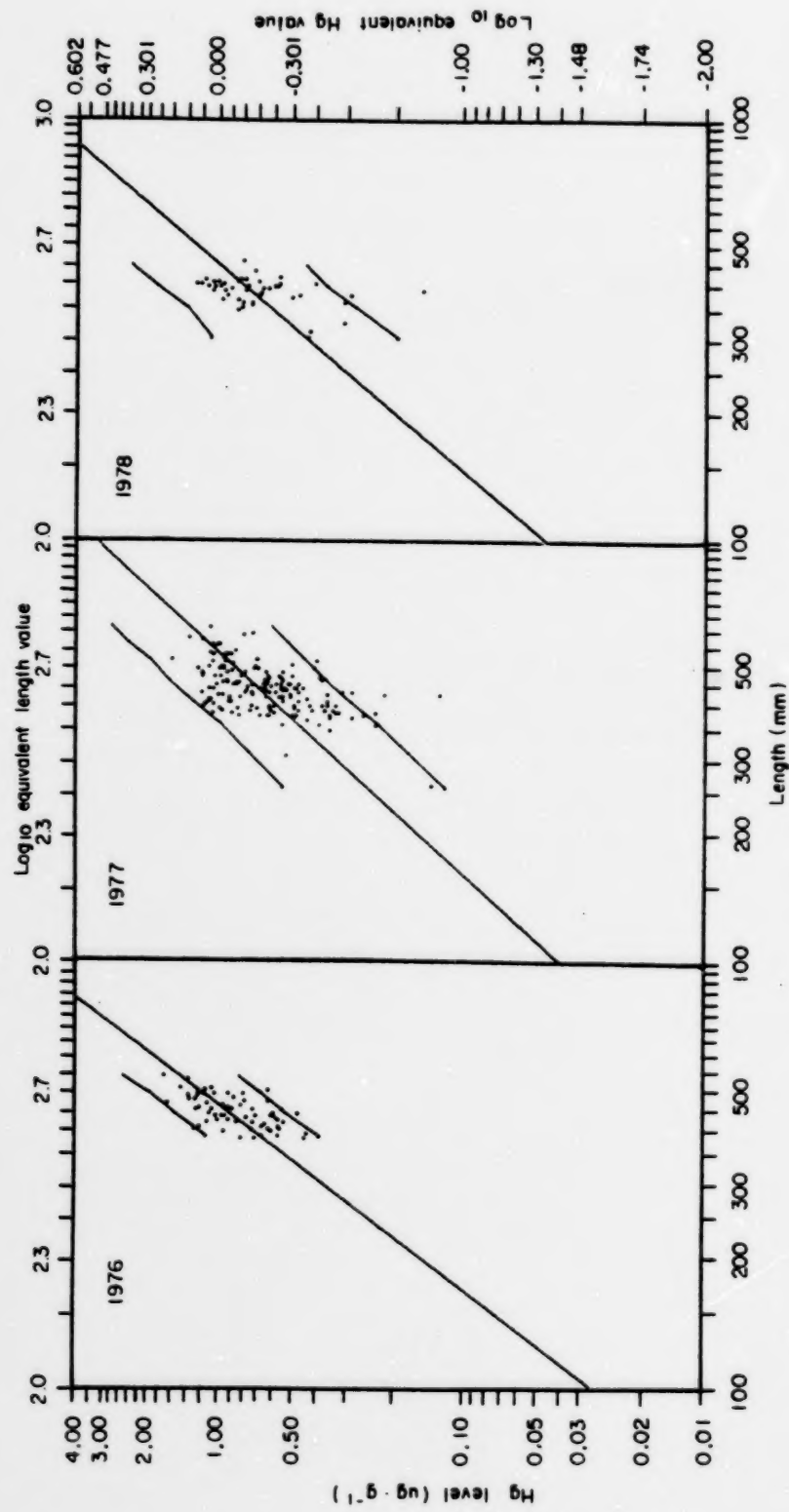
Threepoint Lake northern pike.



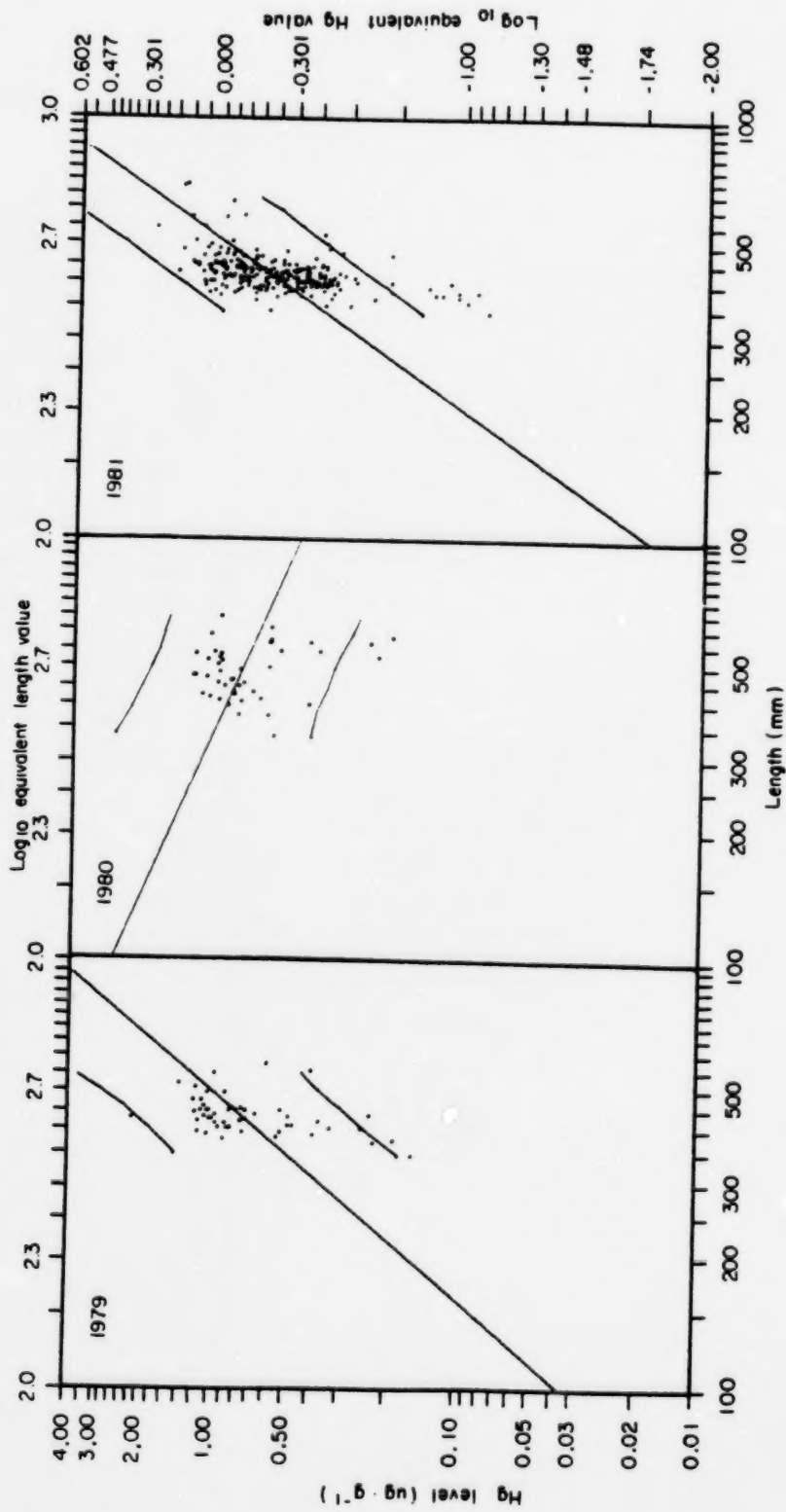
Threepoint Lake northern pike.



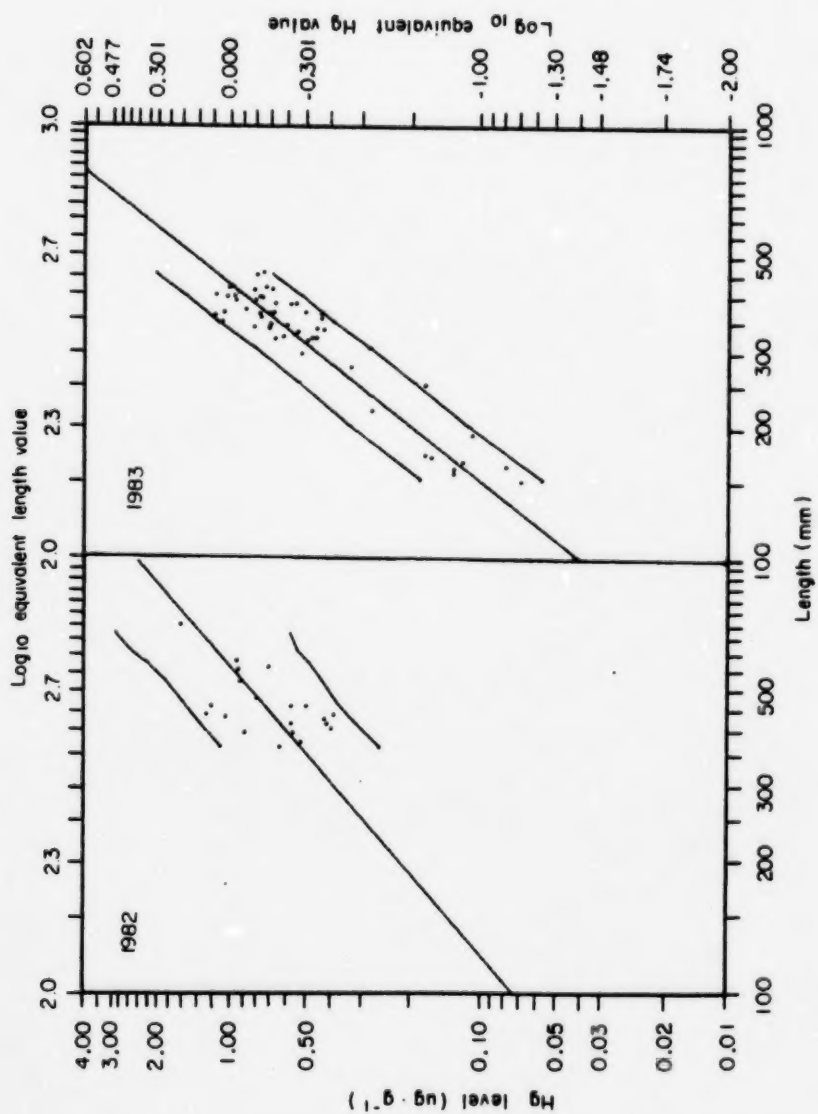
Sipiwesk Lake walleye.



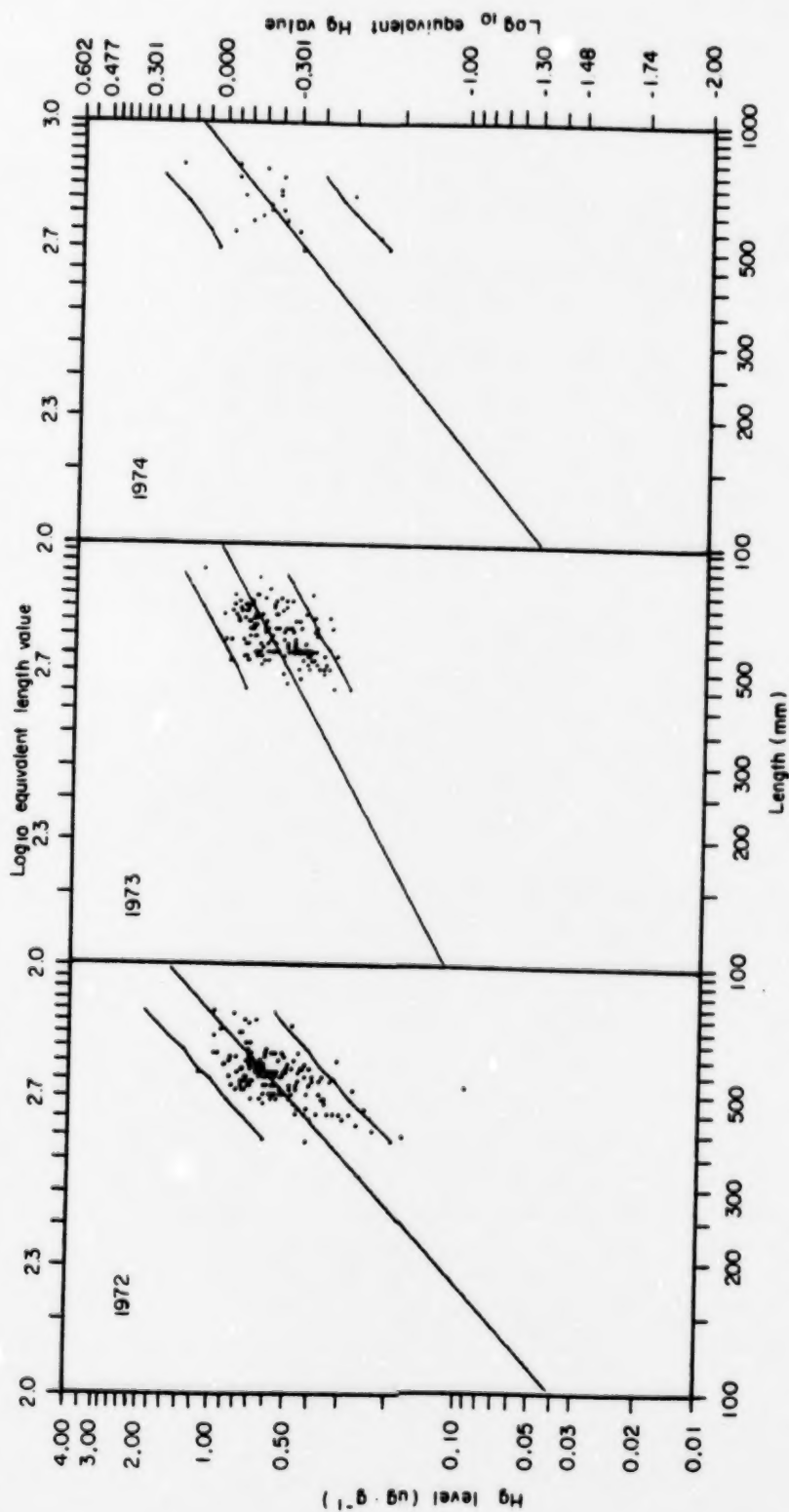
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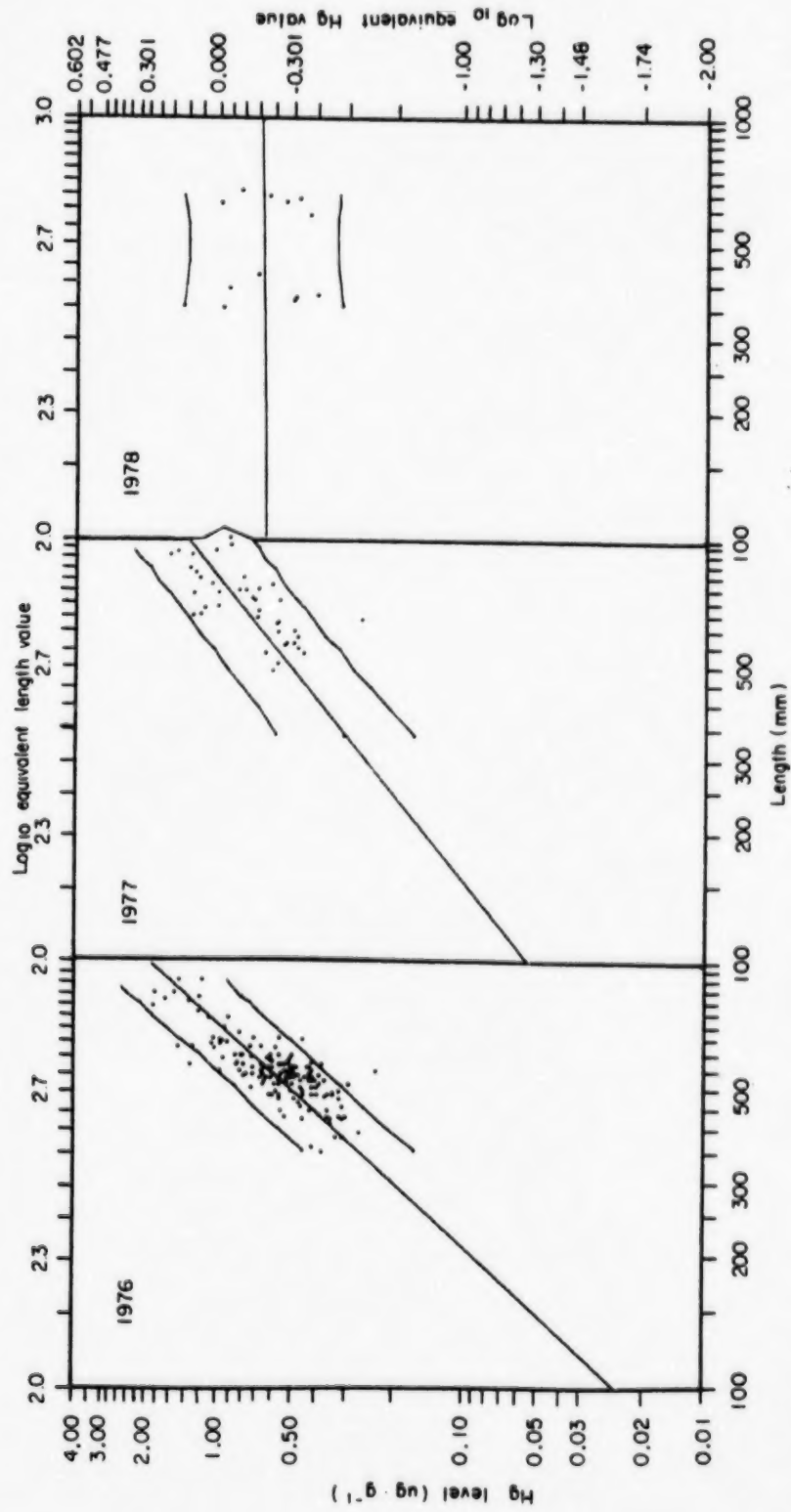
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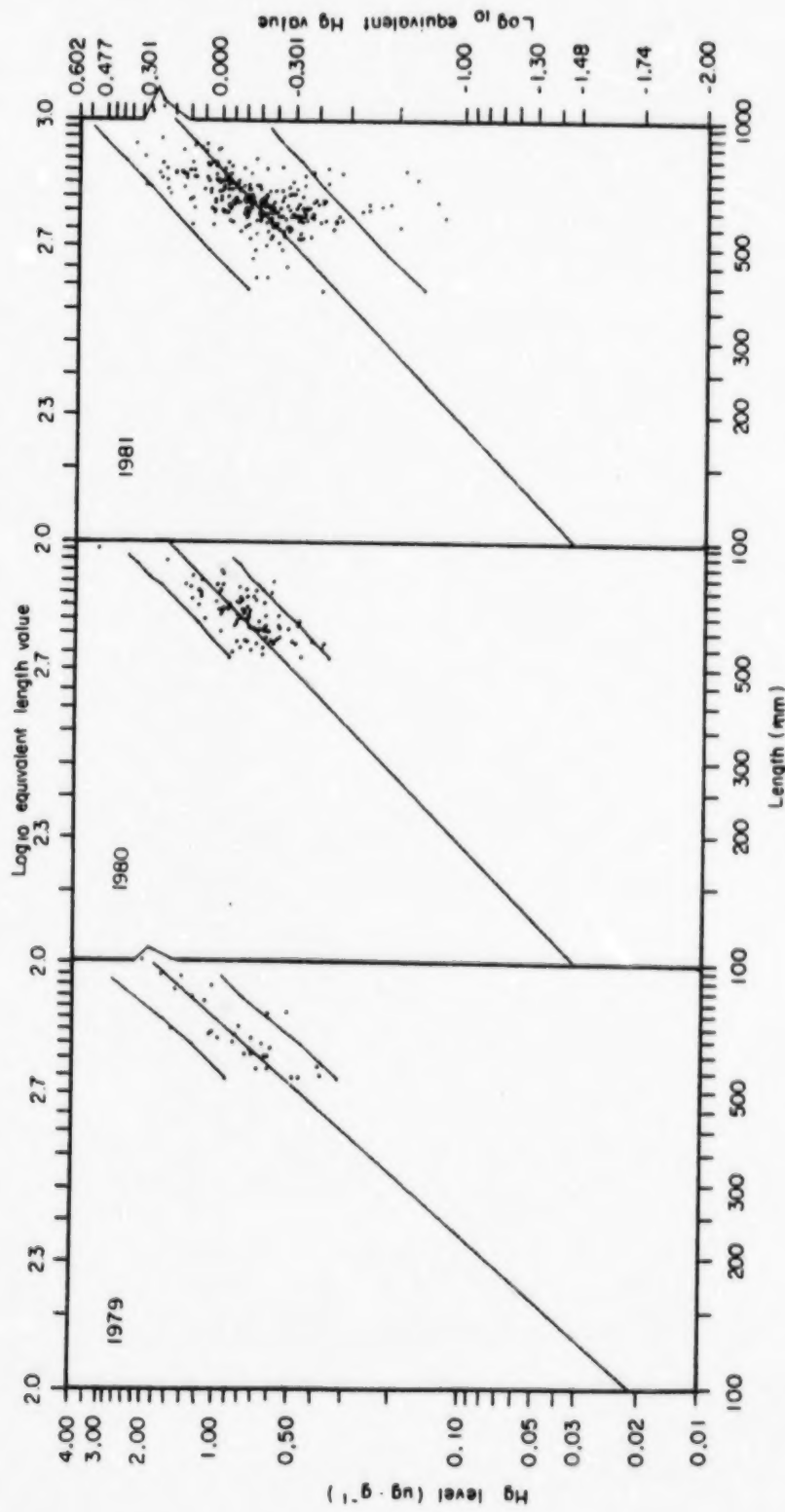
Sipiwek Lake walleye.



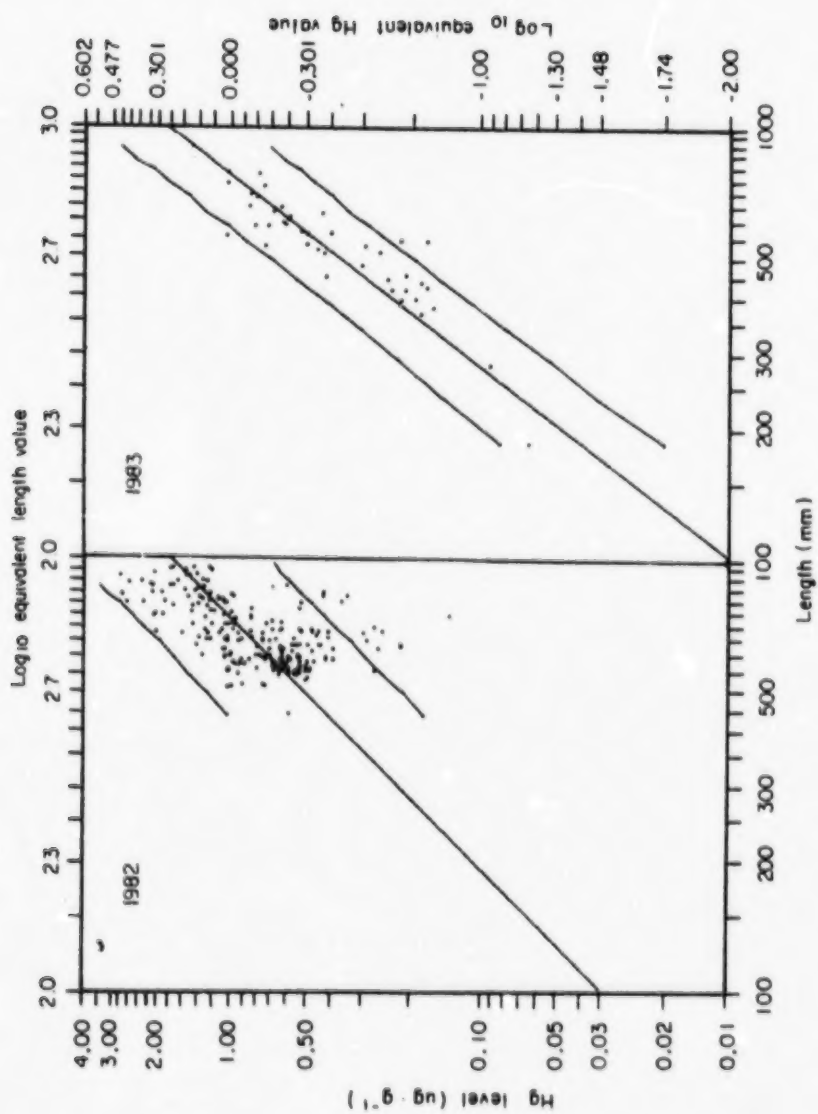
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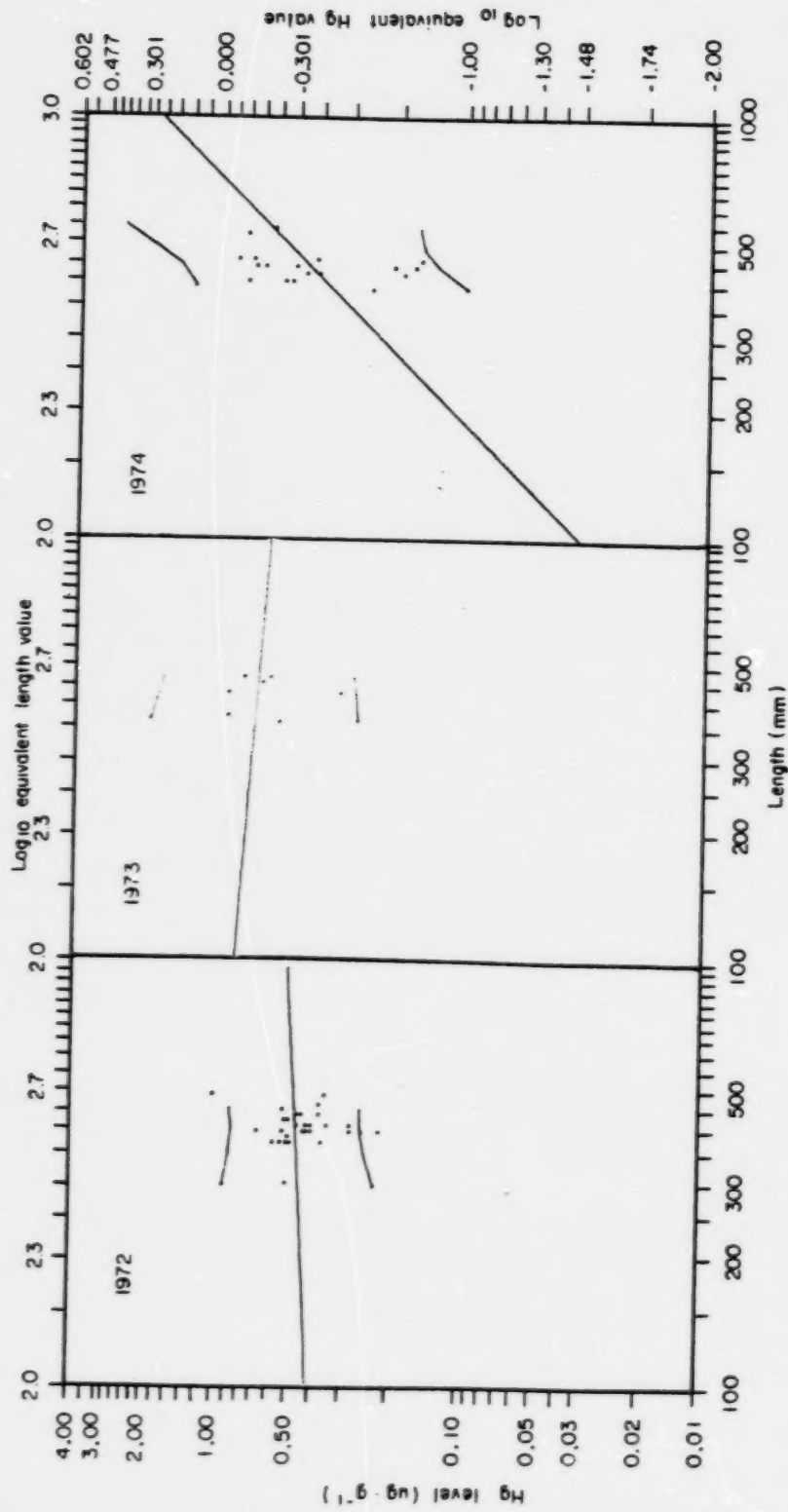
Sipiwesk Lake northern pike.



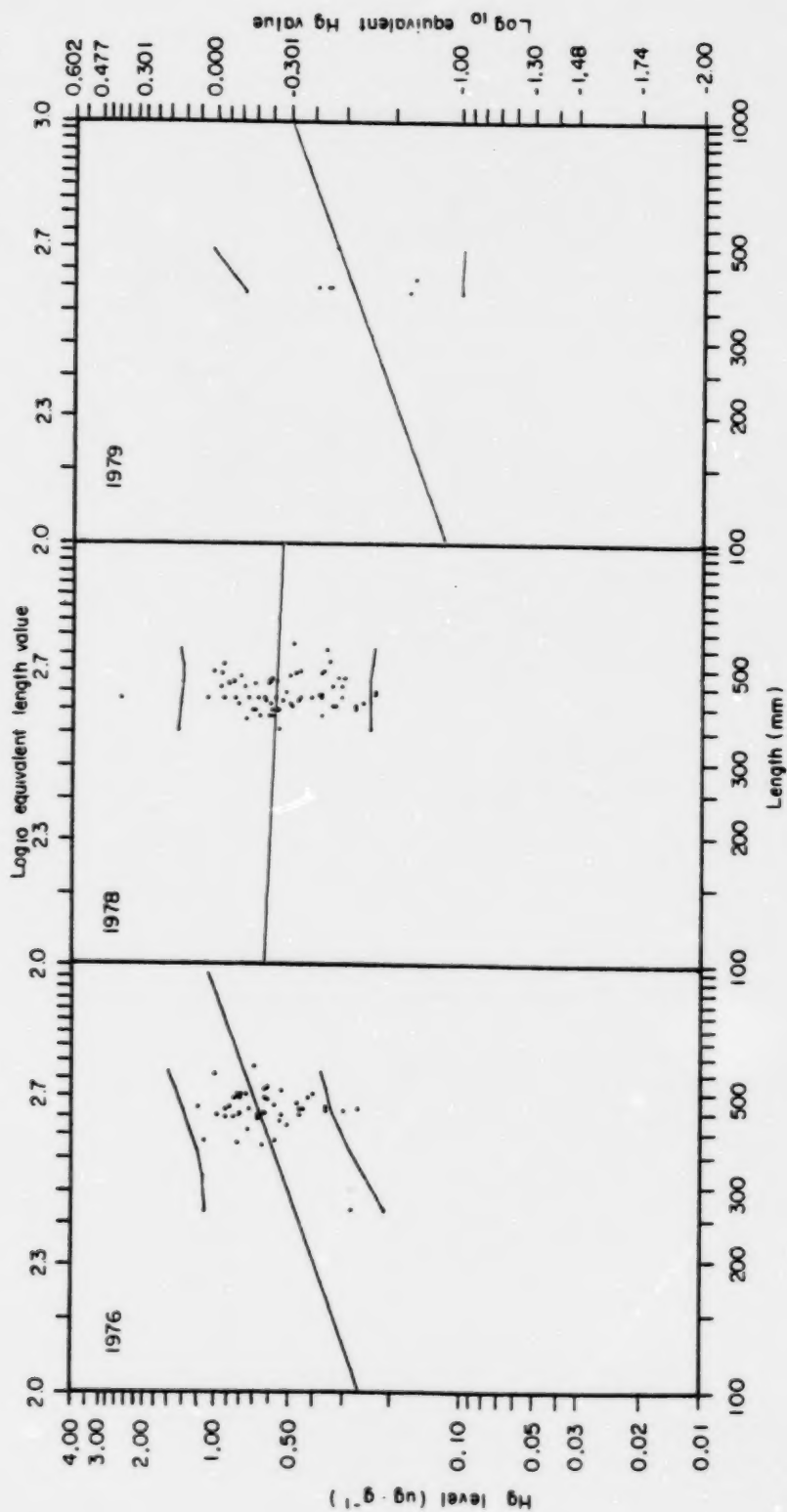
Sipiwesk Lake northern pike.



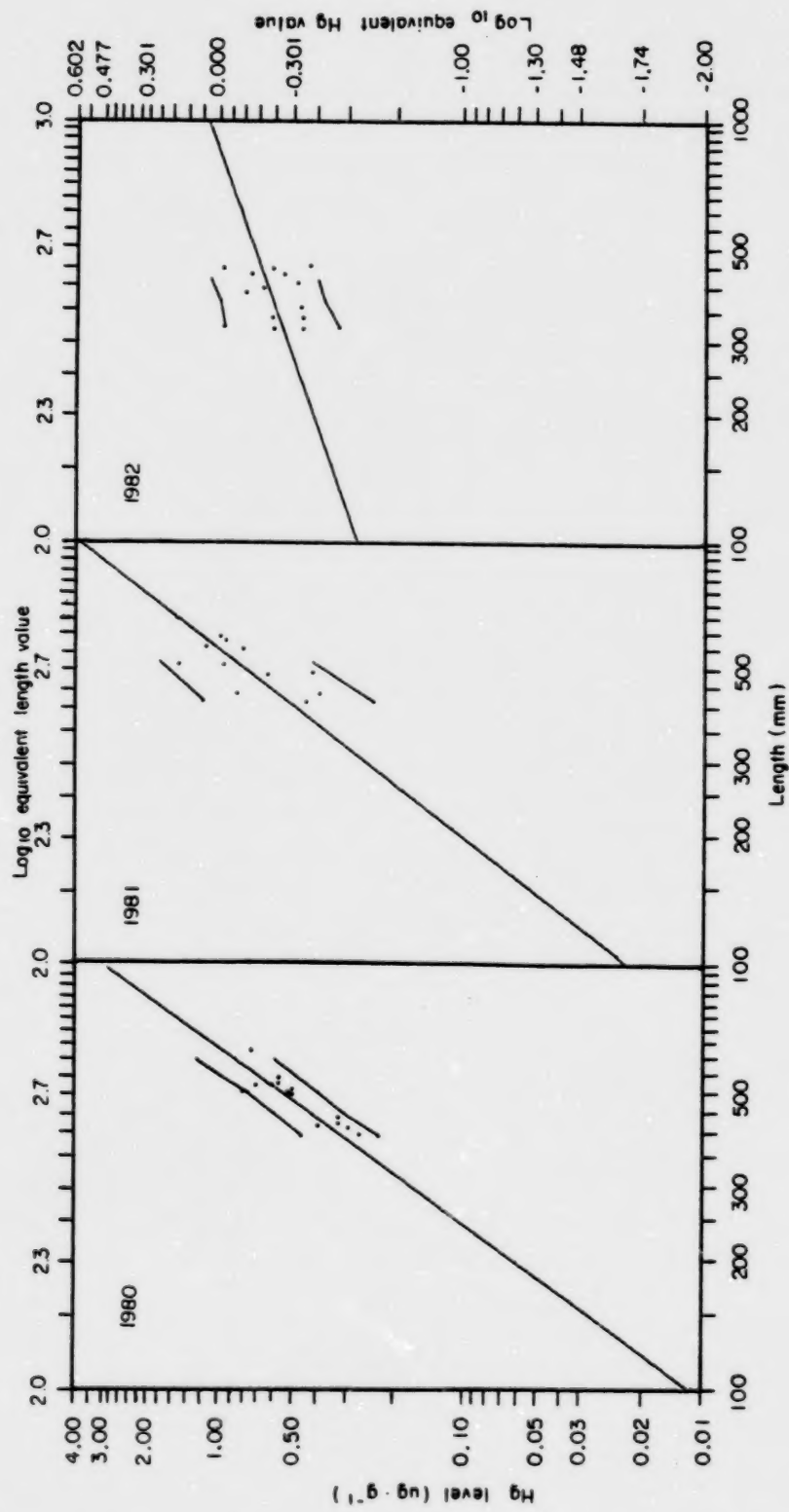
Sipiwesk Lake northern pike.



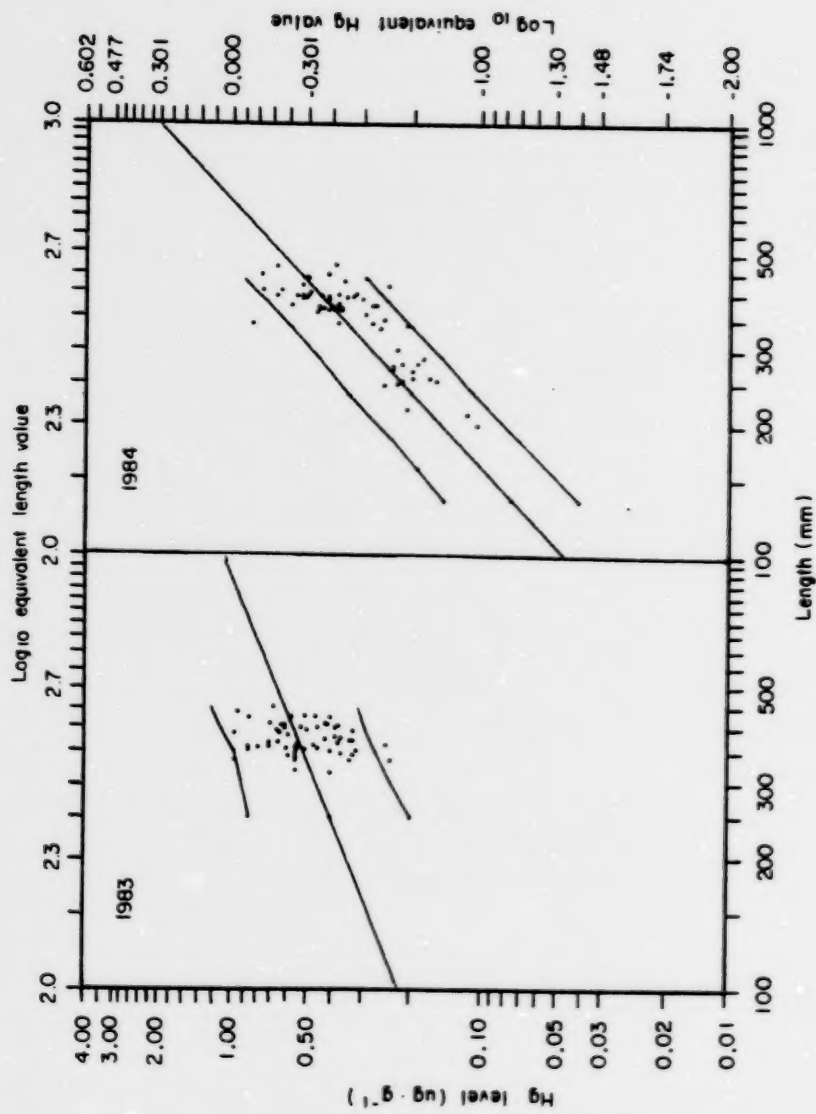
Split Lake walleye.



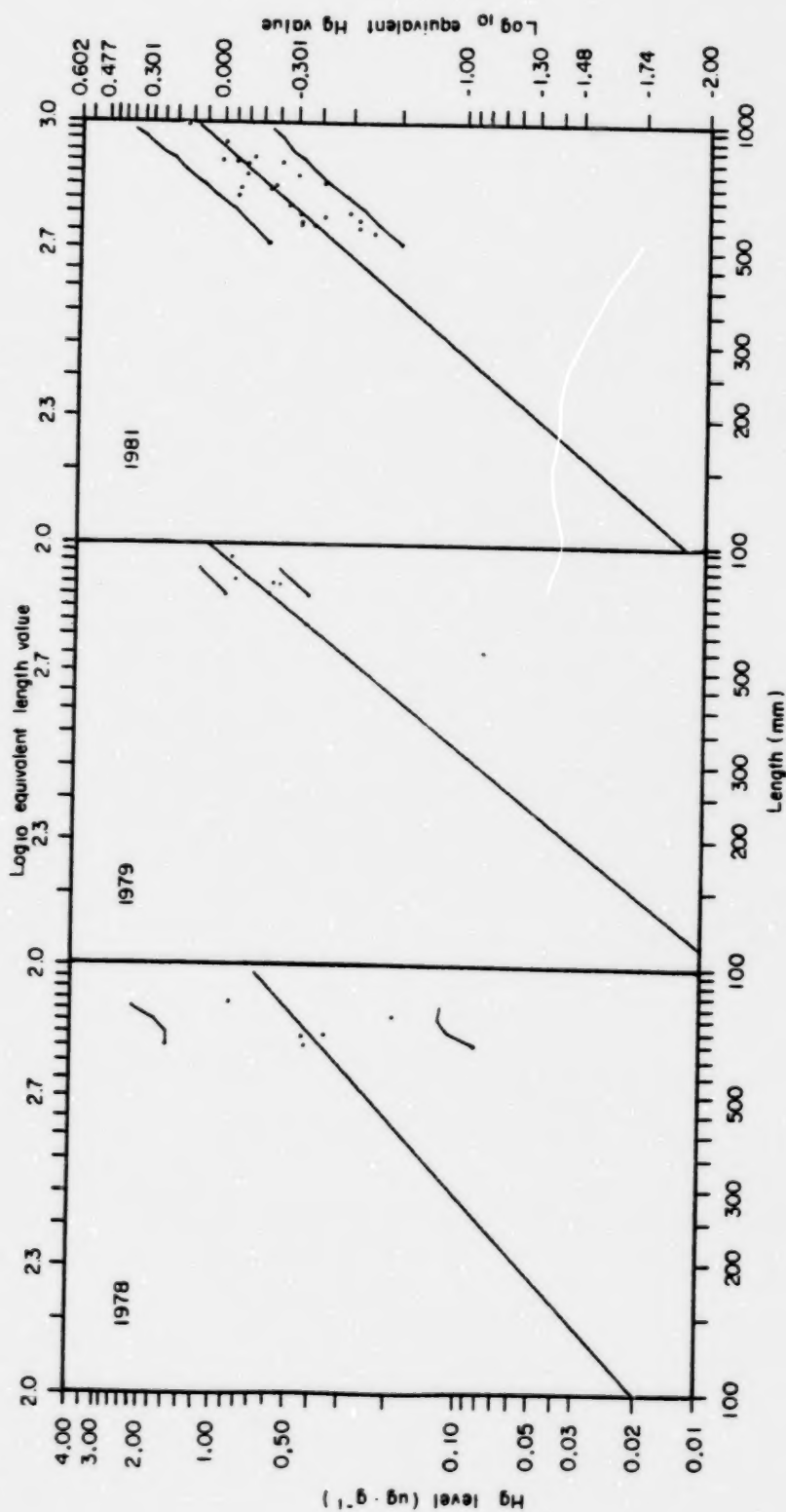
Split Lake walleye.



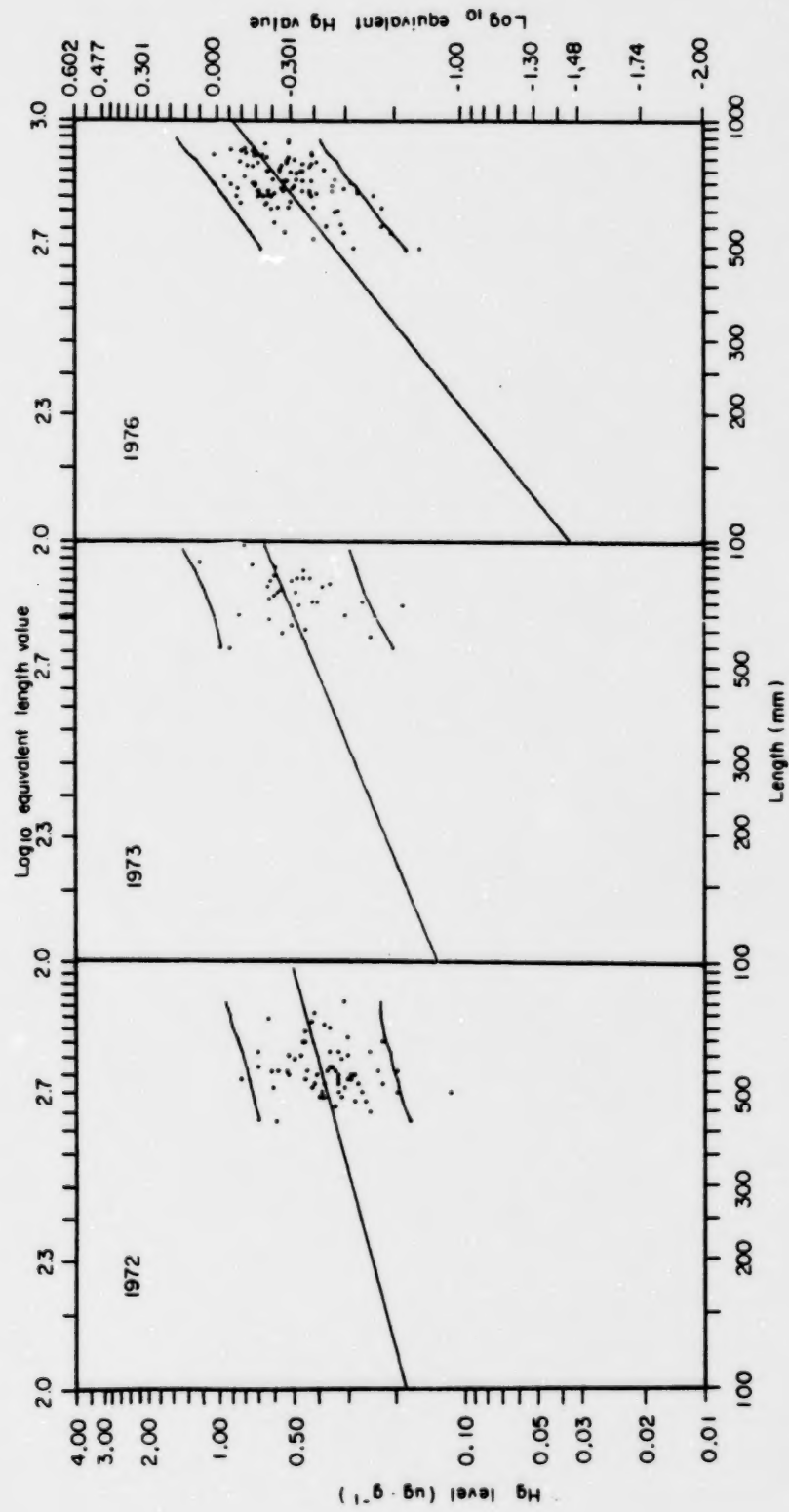
Split Lake walleye.



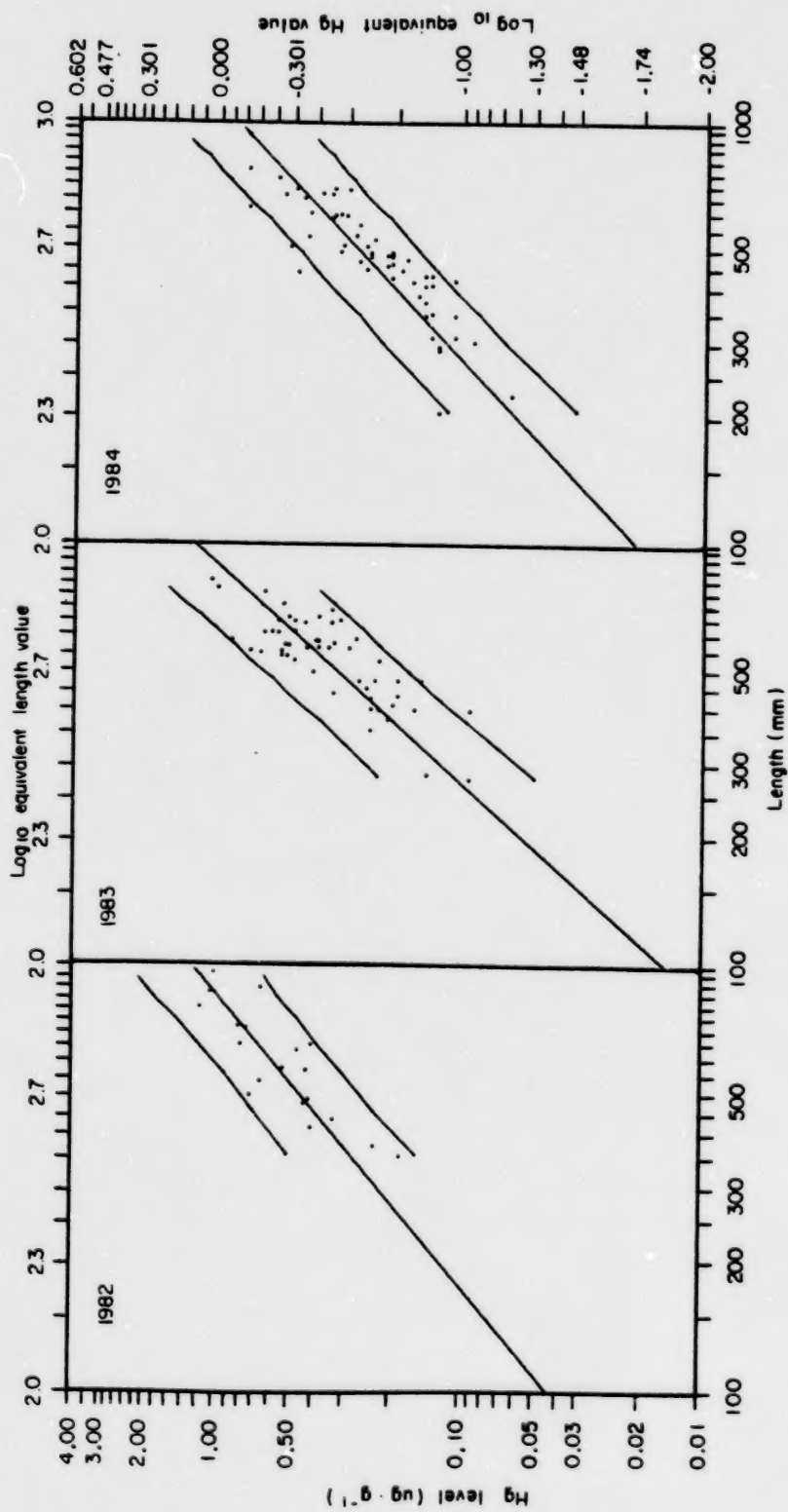
Split Lake walleye.



Split Lake walleye.



Split Lake northern pike.



Split Lake northern pike.

Appendix 12. Standardized muscle Hg levels (by regression analysis) of whitefish, walleye and northern pike data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.

Rat - Burntwood River System lakes, 1983 - 1985.

Lake	Year	350 mm whitefish	400 mm walleye	550 mm northern pike
		($\mu\text{g}\cdot\text{g}^{-1}$)	($\mu\text{g}\cdot\text{g}^{-1}$)	($\mu\text{g}\cdot\text{g}^{-1}$)
Karsakuwigamak	1984	0.22	1.96	1.41
Pemichigamau	1985	0.22	1.47	1.19
West & Central Mynarski	1984	0.10	0.92	0.80
Rat	1983	0.18	1.85	1.33
	1984	0.25	1.92	1.52
	1985	0.21	1.52	1.34
Costello*	1985	0.04	0.37	0.33
Suwannee*	1985	0.03	0.11	0.21
Notigi	1983	0.19	1.44	1.23
	1985	0.28	1.19	1.39
Wapisu	1983	0.27	1.42	1.68
	1985	0.38	1.56	1.53
Macheewin	1984	0.06	0.40	0.55
Osik	1984	0.17	0.91	1.25
Footprint	1983	0.15	1.23	1.35
	1984	0.09	1.17	1.48
	1985	0.14	1.14	1.27
Threepoint	1983	0.21	1.65	1.75
	1984	0.21	1.31	1.44
	1985	0.23	1.22	1.27
Wuskwatim	1984	0.18	0.68	1.42
Birch Tree	1985	0.26	1.51	1.09
Mystery	1983	0.17	0.65	0.95
Apussigamasi	1984	0.28	1.53	1.25

* non-flooded

Nelson River System lakes, 1983 - 1985.

Lake	Year	350 mm whitefish	400 mm walleye	550 mm northern pike
		($\mu\text{g}\cdot\text{g}^{-1}$)	($\mu\text{g}\cdot\text{g}^{-1}$)	($\mu\text{g}\cdot\text{g}^{-1}$)
Sipiwesk	1983	0.04	0.87	0.48
Assean*	1985	0.03	0.22	0.20
Split	1983	0.08	0.55	0.40
	1984	0.07	0.43	0.31
Stephens	1983	0.18	1.36	1.05
	1984	0.19	0.81	0.87

* non-flooded

Appendix 13. Standardized muscle Hg levels (by coefficient) of whitefish, walleye and northern pike data collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985.

Rat - Burntwood lakes.

Lake	Year	350 mm whitefish			400 mm walleye			550 mm Northern pike		
		n	coefficient	Hg	n	coefficient	Hg	n	coefficient	Hg
Karsukwigamak	1984	29	0.00064	0.22	18	0.00508	2.03	20	0.00290	1.59
Pemichigamau	1985	16	0.00061	0.21	21	0.00375	1.50	21	0.00248	1.37
W. & C. Mynarski	1982		N.D.		21	0.00305	1.22	5	0.10062	0.34
	1983		N.D.		10	0.00139	0.56		-	
	1984	27	0.00033	0.12	25	0.00306	1.22	13	0.00190	1.04
Costello*	1979		N.D.		5	0.00073	0.29		N.D.	
	1985	3	0.00013	0.04	23	0.00103	0.41	22	0.00062	0.34
Suwannee*	1979		N.D.			-		5	0.00036	0.19
	1985	6	0.00003	0.01	10	0.00031	0.12	32	0.00045	0.25
Rat	1978		-		15	0.00582	2.33	12	0.00339	1.87
	1979		N.D.		16	0.00242	0.97		N.D.	
	1980	7	0.00069	0.24	12	0.00328	2.11		-	
	1983	8	0.00058	0.20	20	0.00519	2.08	11	0.00293	1.61
	1984	21	0.00081	0.28	20	0.00308	2.03	18	0.00315	1.73
	1985	16	0.00055	0.19	19	0.00402	1.61	31	0.00275	1.51
Notigi	1978		N.D.		16	0.00287	1.15		N.D.	
	1980	1	0.00041	0.14	2	0.00641	2.56			
	1981	9	0.00064	0.22	20	0.00456	1.83	44	0.00290	1.60
	1982		N.D.			-		1	0.00291	1.60
	1983	25	0.00053	0.19	9	0.00399	1.59	19	0.00249	1.37
	1985	18	0.00075	0.26	10	0.00309	1.24	34	0.00266	1.46
Mapisu	1977		N.D.		81	0.00273	1.09	24	0.00143	0.79
	1983	18	0.00107	0.37	13	0.00365	1.46	31	0.00337	1.85
	1985	18	0.00092	0.32	40	0.00396	1.58	23	0.00307	1.69

Kat - Burntwood lakes. Cont'd.

Lake	Year	350 mm whitefish			400 mm walleye			550 mm Northern pike		
		n	coefficient	lg	n	coefficient	lg	n	coefficient	lg
Macheewin	1981		N.D.		4	0.00223	0.89	5	0.00054	0.29
	1982		N.D.		4	0.00234	0.94	8	0.00107	0.59
	1984	33	0.00019	0.07	27	0.00114	0.46	35	0.00113	0.62
Osik	1982		N.D.		3	0.00274	1.09	1	0.00171	0.94
	1983		N.D.		9	0.00205	0.82	2	0.00283	1.56
	1984	29	0.00052	0.18	20	0.00252	1.01	19	0.00282	1.55
Footprint	1978		N.D.		18	0.00259	1.03	1	0.00140	0.77
	1980	4	0.00066	0.23	5	0.00295	1.18	3	0.00218	1.20
	1981	16	0.00054	0.19	21	0.00309	1.23	8	0.00211	1.16
	1983	17	0.00040	0.14	18	0.00345	1.38	17	0.00273	1.50
	1984	21	0.00024	0.08	38	0.00308	1.23	12	0.00310	1.71
	1985	34	0.00041	0.14	7	0.00324	1.30	8	0.00225	1.24
Threepoint	1980	1	0.00133	0.47	4	0.00379	1.52	3	0.00214	1.18
	1981	8	0.00063	0.22	33	0.00345	1.38	15	0.00270	1.49
	1983	18	0.00060	0.21	26	0.00432	1.73	20	0.00327	1.80
	1984	26	0.00061	0.21	24	0.00385	1.54	25	0.00300	1.65
	1985	24	0.00064	0.23	22	0.00326	1.31	19	0.00266	1.46
Wuskwatim	1979		N.D.		50	0.00221	0.88	42	0.00156	0.86
	1980		N.D.		16	0.00239	0.96	5	0.00182	1.00
	1981	14	0.00077	0.27	31	0.00224	0.90	11	0.00173	0.95
	1982		N.D.			N.D.		2	0.00145	0.80
	1983		N.D.		12	0.00190	0.76		N.D.	
	1984	17	0.00046	0.16	27	0.00216	0.86	19	0.00286	1.57
Birch Tree	1985	21	0.00076	0.27	4	0.00377	1.51	5	0.00213	1.17

N.D. = No Data

Rat - Burntwood lakes. Cont'd.

Lake	Year	350 mm whitefish			400 mm walleye			550 mm Northern pike		
		n	coefficient	Hg	n	coefficient	Hg	n	coefficient	Hg
Mystery	1979		N.D.		6	0.00237	0.95	15	0.00166	0.91
	1982		N.D.		4	0.00232	0.93	13	0.00151	0.83
	1983	8	0.00040	0.17	7	0.00229	0.91	29	0.00169	0.93
Ospwagon	1982		N.D.		10	0.00223	0.89		-	
	1983		N.D.			-		2	0.00185	0.74
Apussigamasi	1982		N.D.			-		1	0.00168	0.92
	1983		N.D.			-		1	0.00229	1.26
	1984	21	0.00081	0.28	11	0.00464	1.80	23	0.00259	1.42

* not flooded

N.D. = No Data

- = Available data outside size category limits.

Nelson River Lakes.

Lake	Year	350 mm whitefish			400 mm walleye			550 mm northern pike		
		n	coefficient	lig	n	coefficient	lig	n	coefficient	lig
Stipvesk	1972				47	0.00207	0.83	119	0.00117	0.64
	1973				39	0.00180	0.72	113	0.00110	0.61
	1974				14	0.00148	0.59	13	0.00108	0.59
	1976				33	0.00189	0.76	111	0.00114	0.63
	1977		N.D.		95	0.00158	0.63	19	0.00122	0.67
	1978				43	0.00215	0.86	6	0.00110	0.61
	1979				34	0.00191	0.76	19	0.00121	0.66
	1980				15	0.00217	0.87	57	0.00126	0.70
	1981				212	0.00172	0.69	196	0.00121	0.67
	1982				12	0.00161	0.65	133	0.00124	0.68
	1983	5	0.00009	0.03	27	0.00214	0.85	24	0.00107	0.59
	1981	22	0.00014	0.05	41	0.00080	0.32	20	0.00046	0.25
	1982		N.D.		3	0.00060	0.24	1	0.00052	0.29
Assean*	1985	12	0.00009	0.03	20	0.00059	0.24	15	0.00039	0.22
	1972				25	0.00111	0.44	48	0.00072	0.40
	1973				4	0.00185	0.74	9	0.00093	0.51
	1974				13	0.00012	0.45		N.D.	
	1976				8	0.00184	0.74	41	0.00081	0.44
	1978				40	0.00151	0.60	1	0.00068	0.37
	1979		N.D.		5	0.00075	0.30		-	
	1980				5	0.00078	0.31		N.D.	
	1981				3	0.00144	0.58	12	0.00082	0.45
	1982				8	0.00175	0.70	7	0.00100	0.55
	1983	16	0.00025		49	0.00144	0.58	29	0.00089	0.49
	1984	20	0.00019	0.07	40	0.00114	0.46	21	0.00065	0.36
Stephens	1983	3	0.00033	0.12	2	0.00273	1.10	28	0.00226	1.24
	1984	9	0.00043	0.15	23	0.00220	0.89	14	0.00182	1.00

* not flooded

N.D. = No Data

- = Available data outside size category limits.

Appendix 14. Standardized muscle Hg levels (by coefficient) of whitefish, walleye and northern pike information collected from non-flooded lakes occurring in the same or adjacent major drainage basins as those lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.

Lake	Year	350 mm whitefish		400 mm walleye		550 mm northern pike	
		n	coefficient	n	coefficient	n	coefficient
Uhlman	1981		N.D.	5	0.00105	2	0.00061
Waskafowaka	1978		N.D.	12	0.00054	9	0.00067
	1982		N.D.	12	0.00113	23	0.00069
Costello	1979		N.D.	5	0.00073		N.D.
	1985	3	0.00013	23	0.00103	22	0.00062
Suwannee	1979		N.D.		-	5	0.00036
	1985	6	0.00003	10	0.00031	32	0.00045
East Mynaraki	1980	1	0.00053	554	0.00239	36	0.00198
	1981		N.D.	88	0.00158	5	0.00051
	1982		N.D.	9	0.00091	6	0.00119
	1983		N.D.	9	0.00126	3	0.00045
	1984	27	0.00033	26	0.00299	18	0.00145
	1985		N.D.	4	0.00091		N.D.
Leftbrook	1981		N.D.	11	0.00176	4	0.00037
	1982		N.D.	6	0.00055		N.D.
	1983		N.D.	2	0.00069		N.D.
Harding	1982		-	5	0.00056		-
Moak	1982		N.D.		N.D.	6	0.00118
	1983		N.D.	4	0.00147		-
Paint	1983		N.D.	1	0.00095	15	0.00072
Partridge Crop	1978		N.D.	5	0.00066	3	0.00071
	1979		N.D.	5	0.00057	5	0.00088
	1980		N.D.	5	0.00058	3	0.00108
Natawahunan	1979		N.D.		-	1	0.00112
	1980		N.D.	10	0.00078	4	0.00069
	1981		N.D.	5	0.00071		N.D.
	1982		N.D.	12	0.00050	5	0.00063

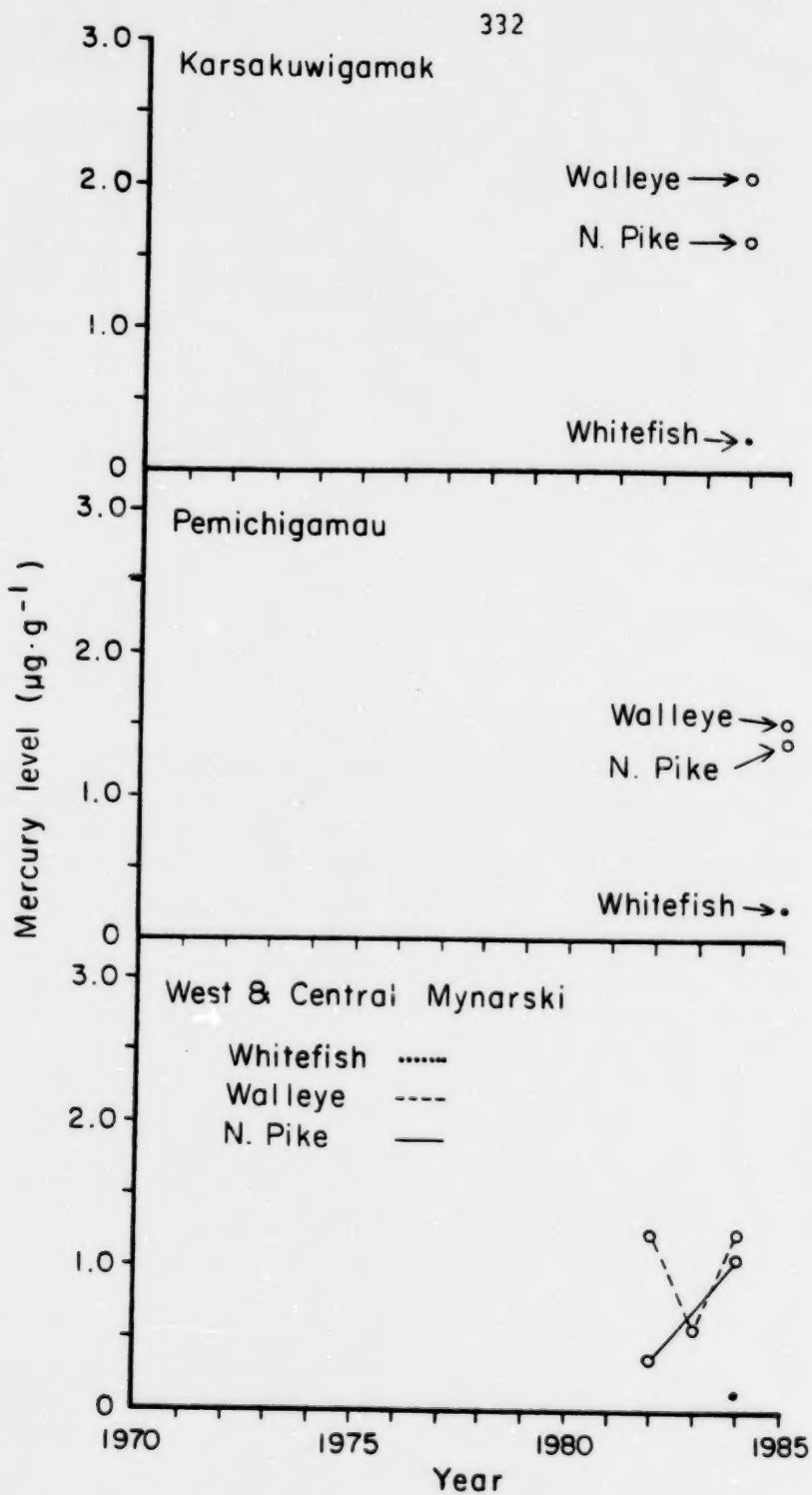
Lake	Year	350 mm whitefish			400 mm walleye			550 mm northern pike		
		n	coefficient	Hg	n	coefficient	Hg	n	coefficient	Hg
Brannigan	1981		N.D.		5	0.00151	0.61	2	0.00058	0.32
	1982		N.D.		5	0.00074	0.30	5	0.00068	0.37
	1983		N.D.		18	0.00085	0.34	10	0.00044	0.24
	1984		N.D.		14	0.00061	0.15	5	0.00057	0.32
Pikwitonei	1978		N.D.		4	0.00058	0.23	1	0.00055	0.30
	1979		N.D.		5	0.00042	0.17		N.D.	
	1981		N.D.		5	0.00092	0.37	2	0.00040	0.22
	1982		N.D.		4	0.00062	0.25	2	0.00072	0.39
Cross	1978		N.D.		5	0.00079	0.32	4	0.00066	0.37
	1979		N.D.		5	0.00092	0.37		-	
	1982		N.D.		2	0.00135	0.54	3	0.00039	0.22
Walker	1979		N.D.		3	0.00038	0.15	3	0.00023	0.13
	1980		N.D.		2	0.00056	0.22	2	0.00035	0.19
	1981		N.D.		3	0.00032	0.13	5	0.00045	0.25
	1982		N.D.		5	0.00051	0.20	2	0.00039	0.22
	1985		N.D.		4	0.00067	0.27		N.D.	
White Rabbit	1978		N.D.			-		9	0.00081	0.45
	1979		N.D.			N.D.		4	0.00065	0.36
	1980		N.D.			N.D.		6	0.00051	0.28
Landing	1978		N.D.		5	0.00033	0.13	8	0.00049	0.27
	1979		N.D.		4	0.00059	0.24	4	0.00053	0.29
	1981		N.D.			N.D.		6	0.00045	0.25
	1982		N.D.		6	0.00042	0.17	6	0.00048	0.26
Cauchon	1978		N.D.		4	0.00080	0.32	4	0.00079	0.43
	1979		N.D.			N.D.		10	0.00084	0.46
	1980		N.D.		3	0.00204	0.82	2	0.00068	0.37
	1983		N.D.			N.D.			-	
Bearhead	1978		N.D.			-		5	0.00051	0.28
	1981		N.D.			N.D.			-	

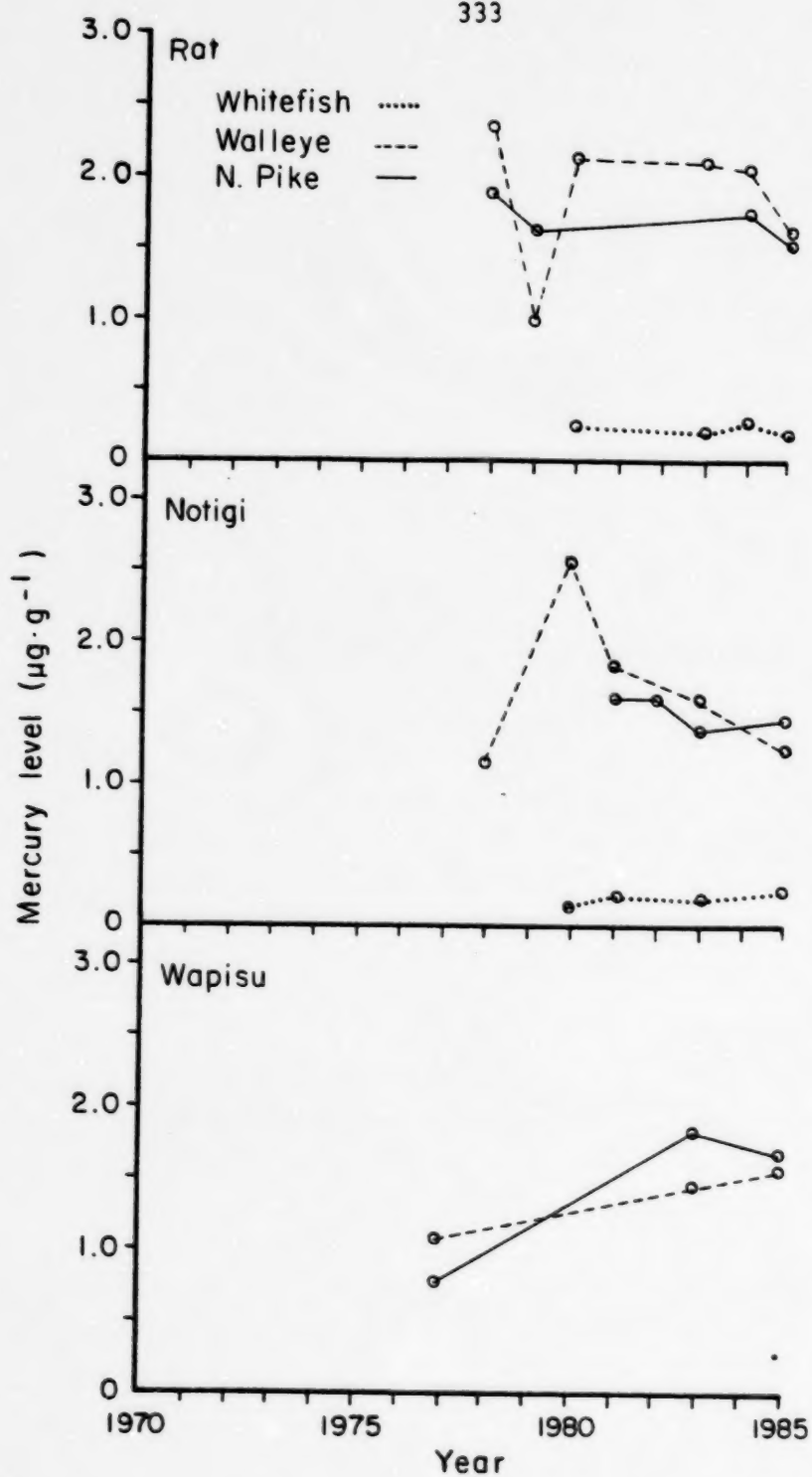
Lake	Year	350 mm whitefish			400 mm walleye			550 mm northern pike		
		n	coefficient	Hg	n	coefficient	Hg	n	coefficient	Hg
Goulet	1978		N.D.		6	0.00080	0.32		-	
	1979		N.D.		3	0.00073	0.29	7	0.00048	0.26
	1980		N.D.		4	0.00077	0.31		-	
	1981		N.D.		14	0.00087	0.35	11	0.00090	0.50
	1982		N.D.		2	0.00045	0.18	5	0.00063	0.34
War	1981		N.D.		3	0.00030	0.12		N.D.	
Butnau	1982		-		17	0.00098	0.39	4	0.00064	0.35
Assean	1981	22	0.00014	0.05	41	0.00082	0.33	20	0.00046	0.25
	1982		N.D.		3	0.00060	0.24	1	0.00052	0.29
	1985	12	0.00009	0.03	26	0.00063	0.25	15	0.00039	0.22
Crying	1982		N.D.		9	0.00185	0.74	2	0.00088	0.48
Limestone	1978		N.D.		6	0.00094	0.38		N.D.	
	1979		N.D.		7	0.00105	0.42	4	0.00058	0.32
	1981		N.D.		6	0.00101	0.41	6	0.00056	0.31

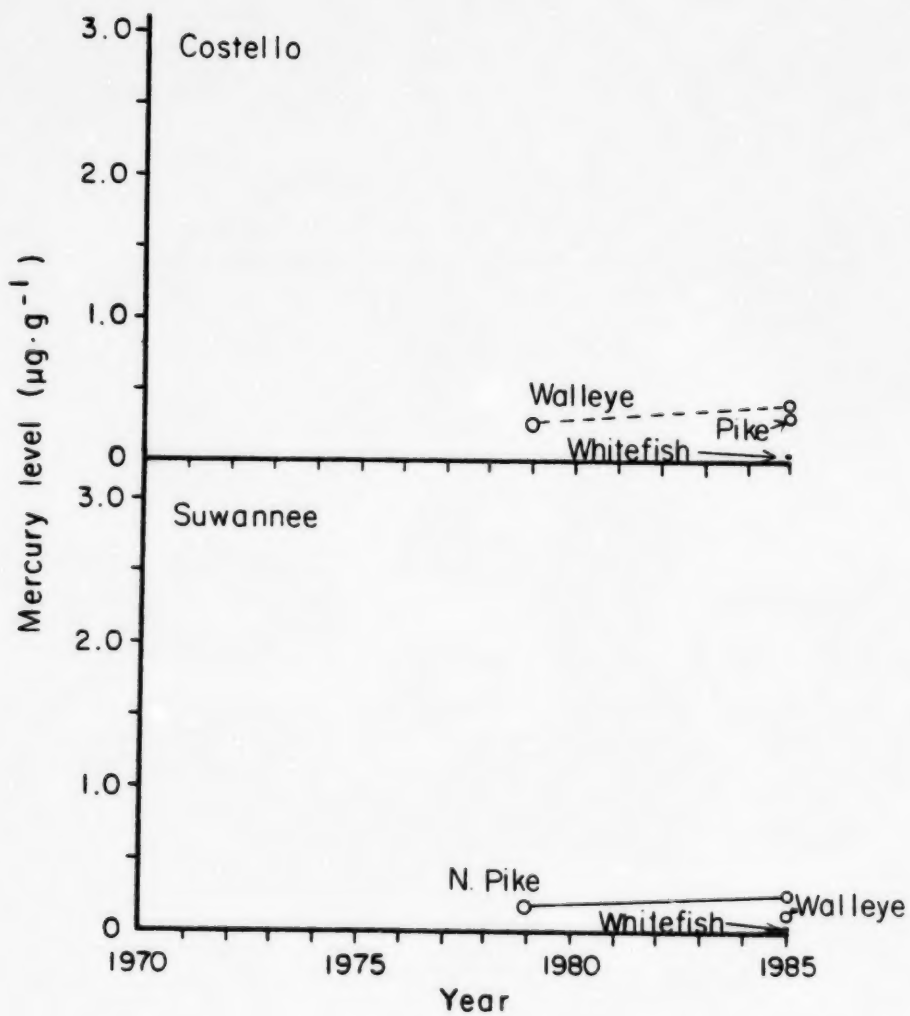
N.D. = No Data

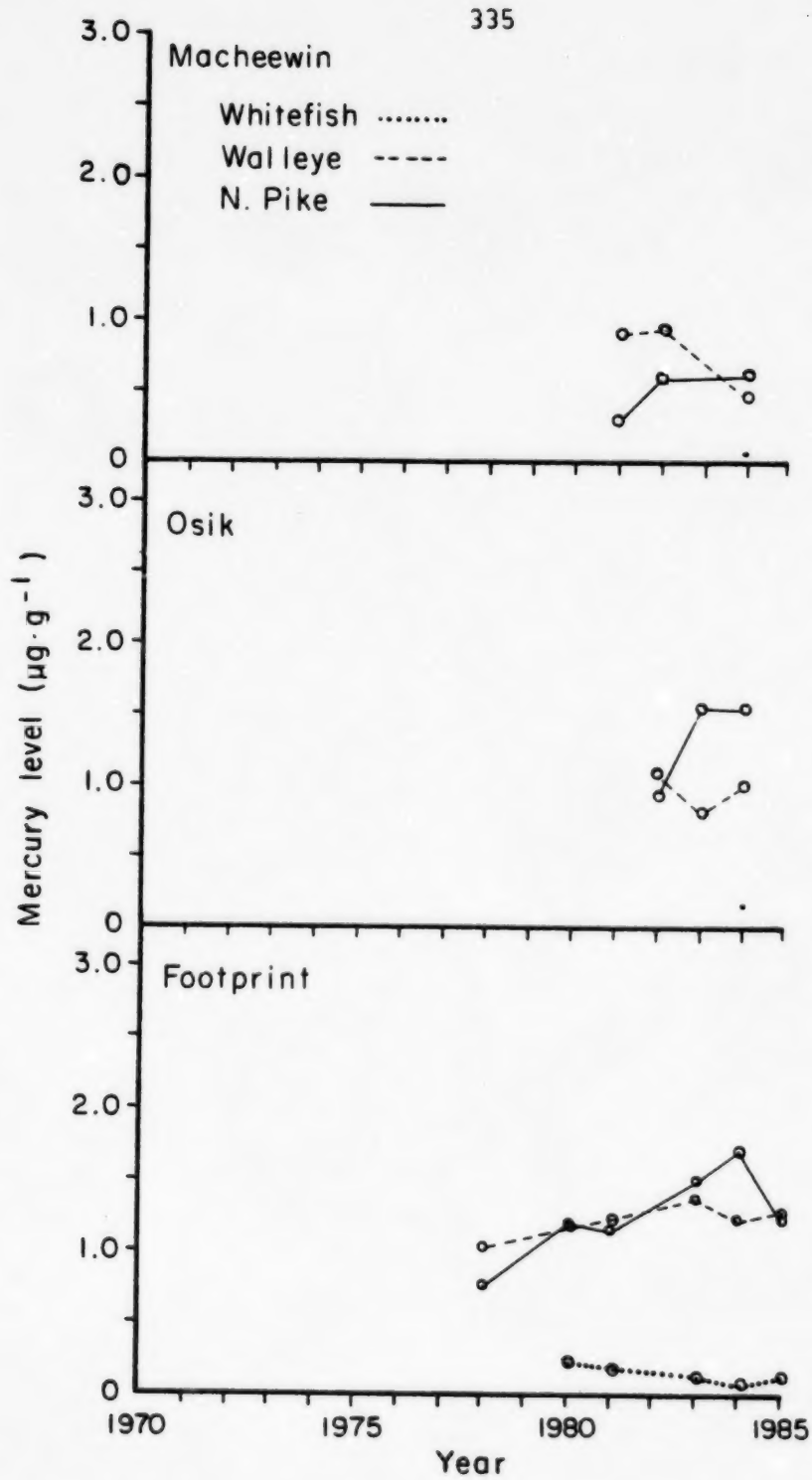
- = Available data outside size category limits.

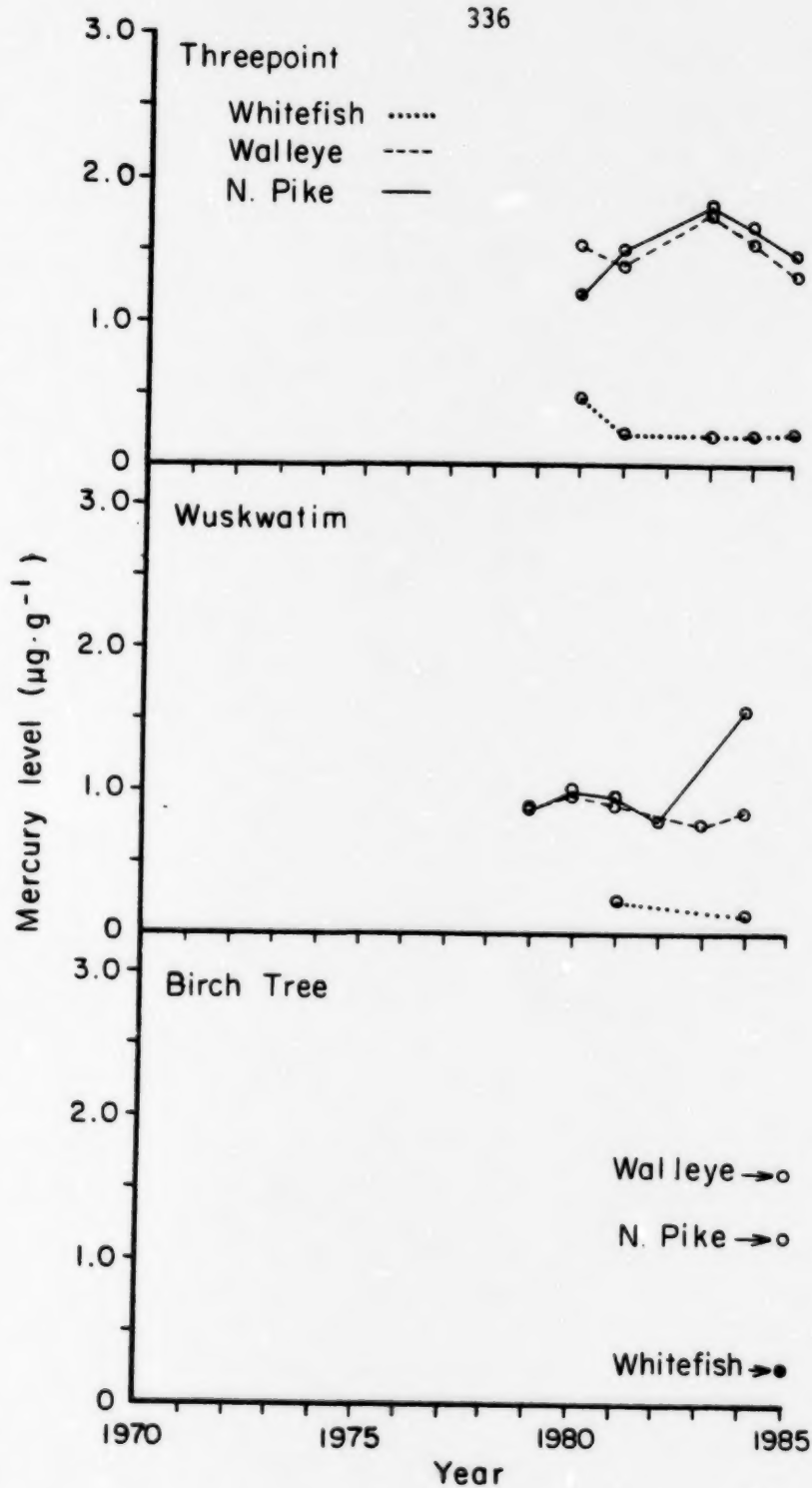
Appendix 15. Graphical representation of standardized annual muscle Hg levels (by coefficient) for whitefish, walleye and northern pike information collected from lakes located on the Rat - Burntwood and Nelson River systems, 1972 - 1985.

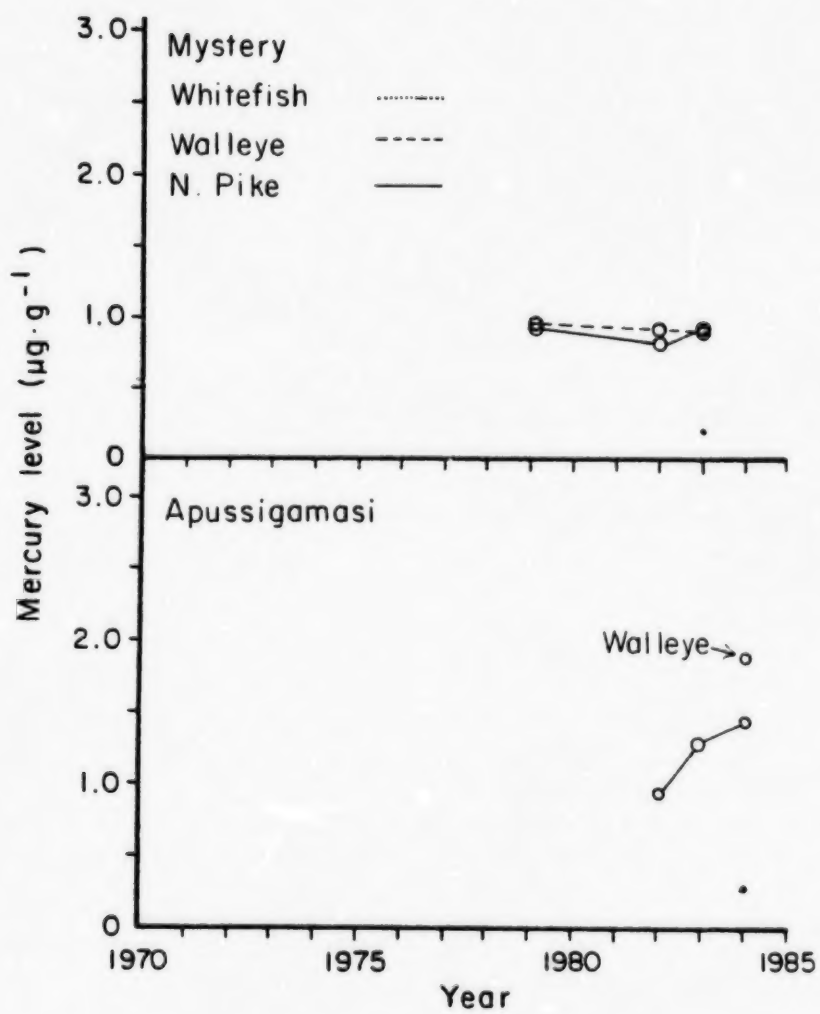


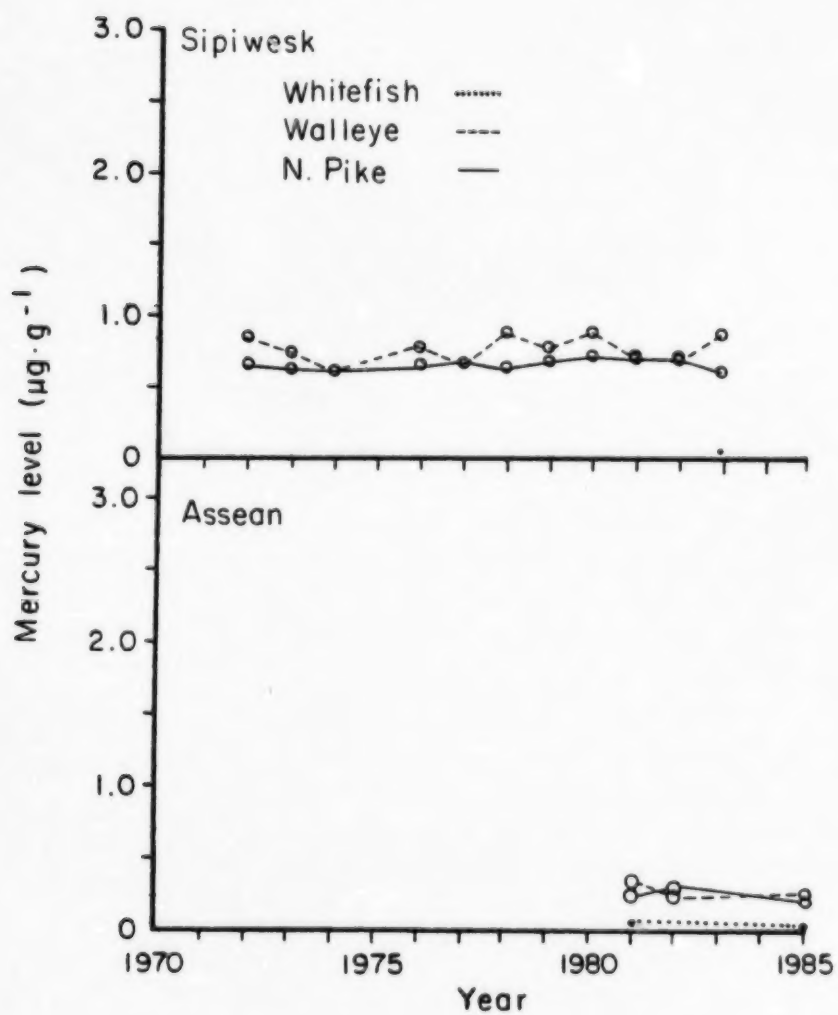


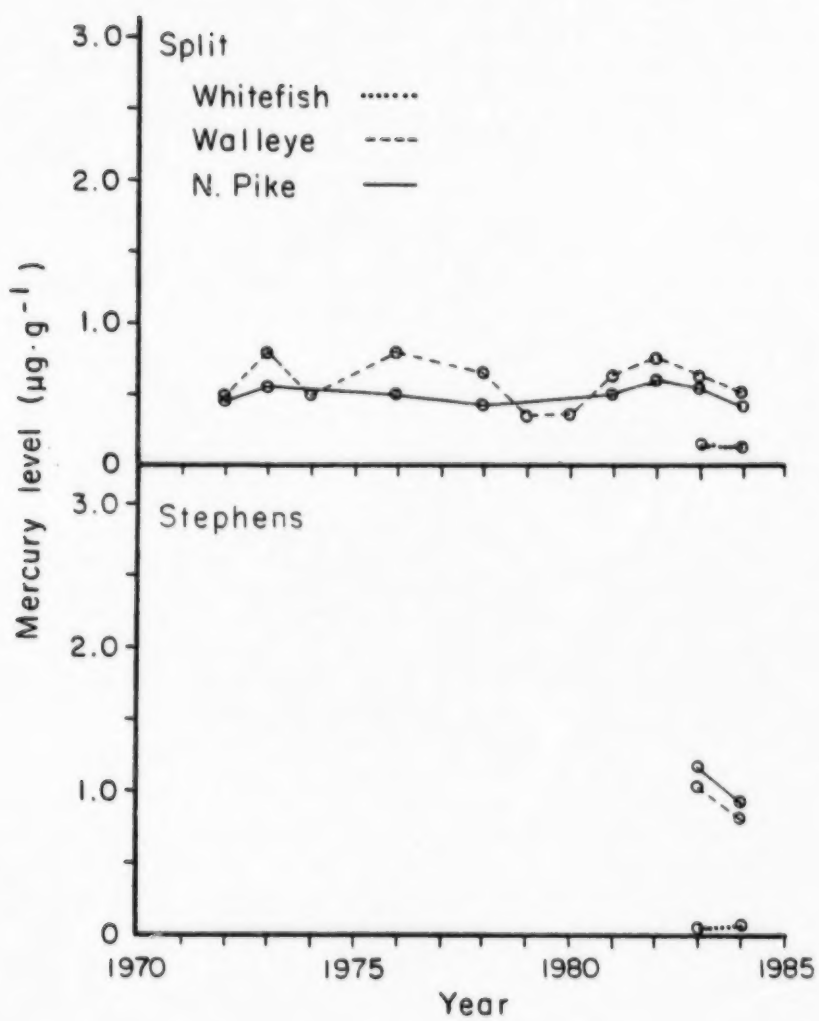




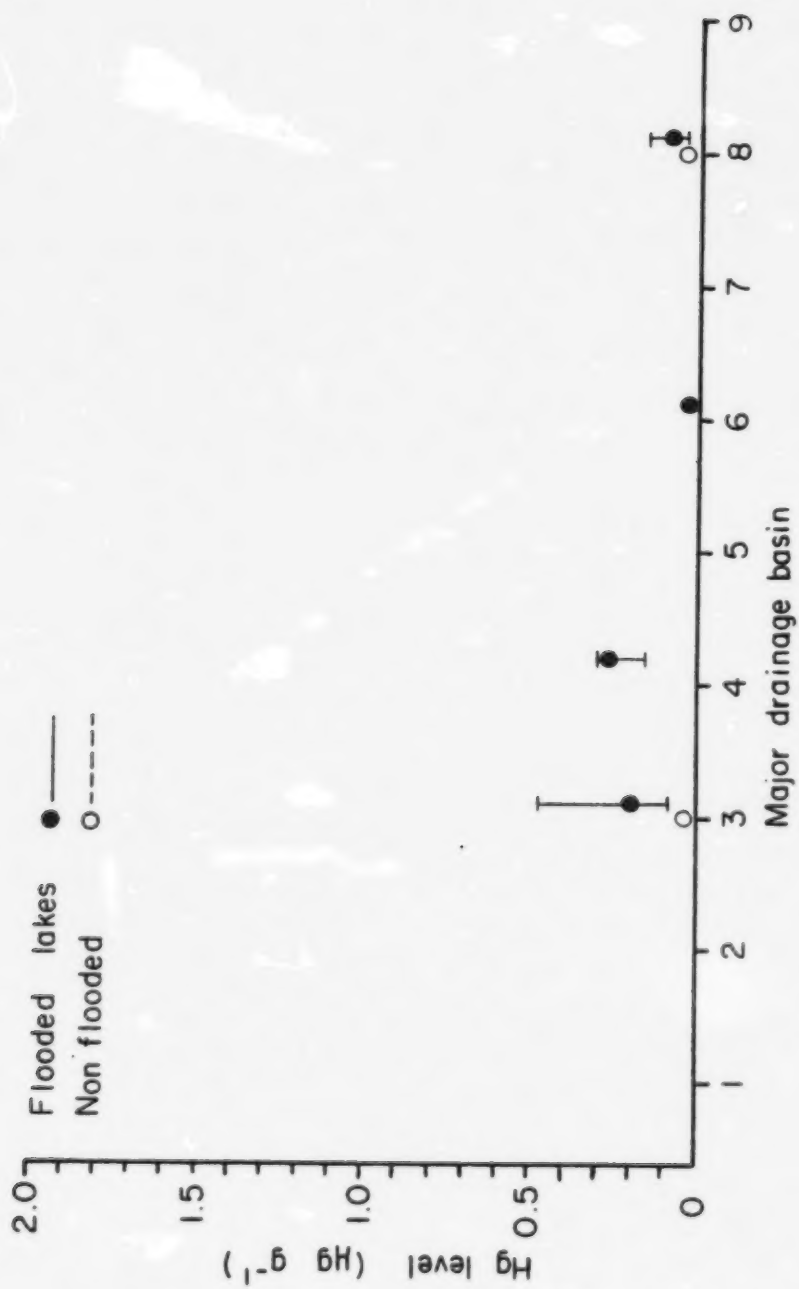




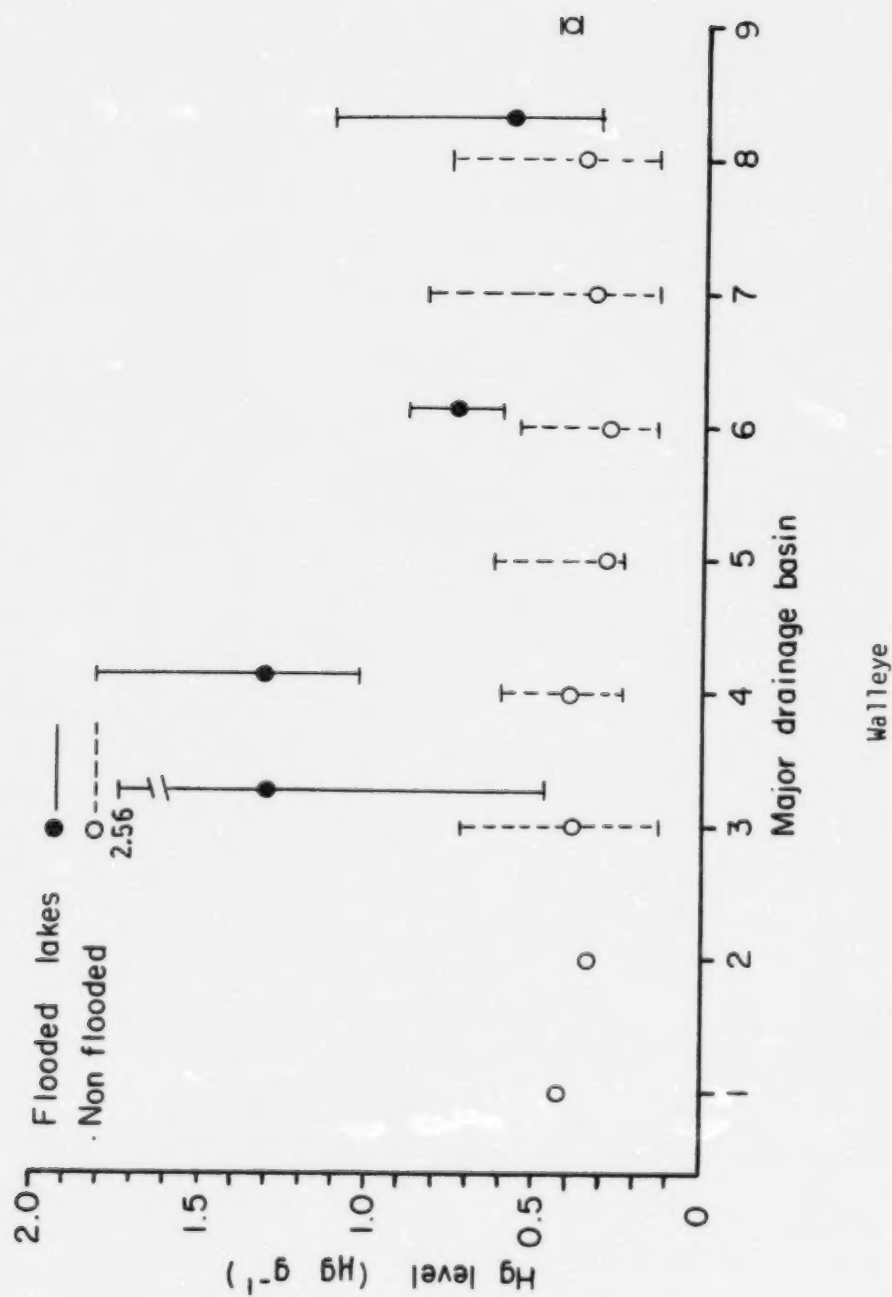


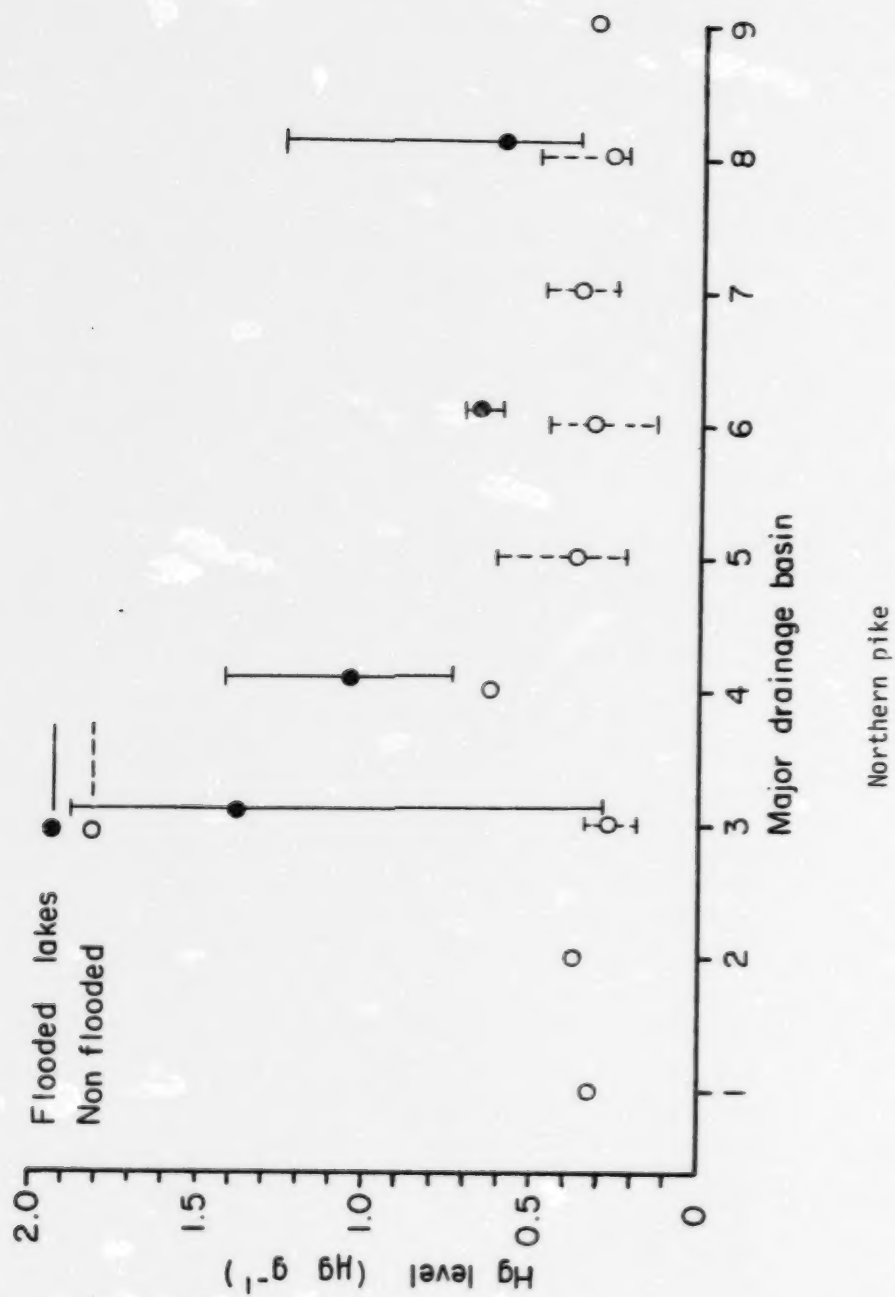


Appendix 16. Comparisons of muscle Hg data collected from flooded and non-flooded lakes occurring within the major drainage basins located around the Rat - Burntwood and Nelson River systems, 1972 - 1985. The min. and max. Hg levels indicated refer to a yearly average from a lake located within the major drainage basin in question. East Mynarski data not included since it may contain some fish from West and Central Mynarski basins.



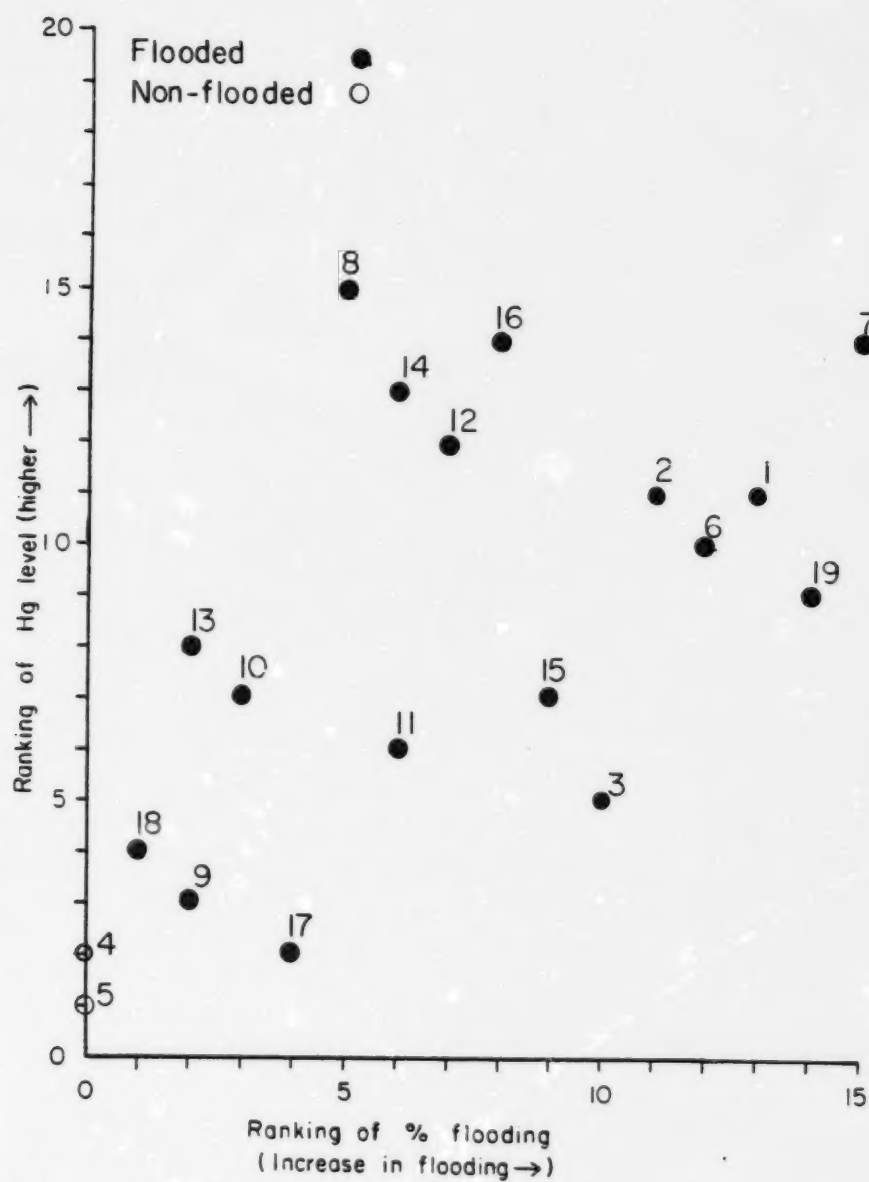
Whitefish



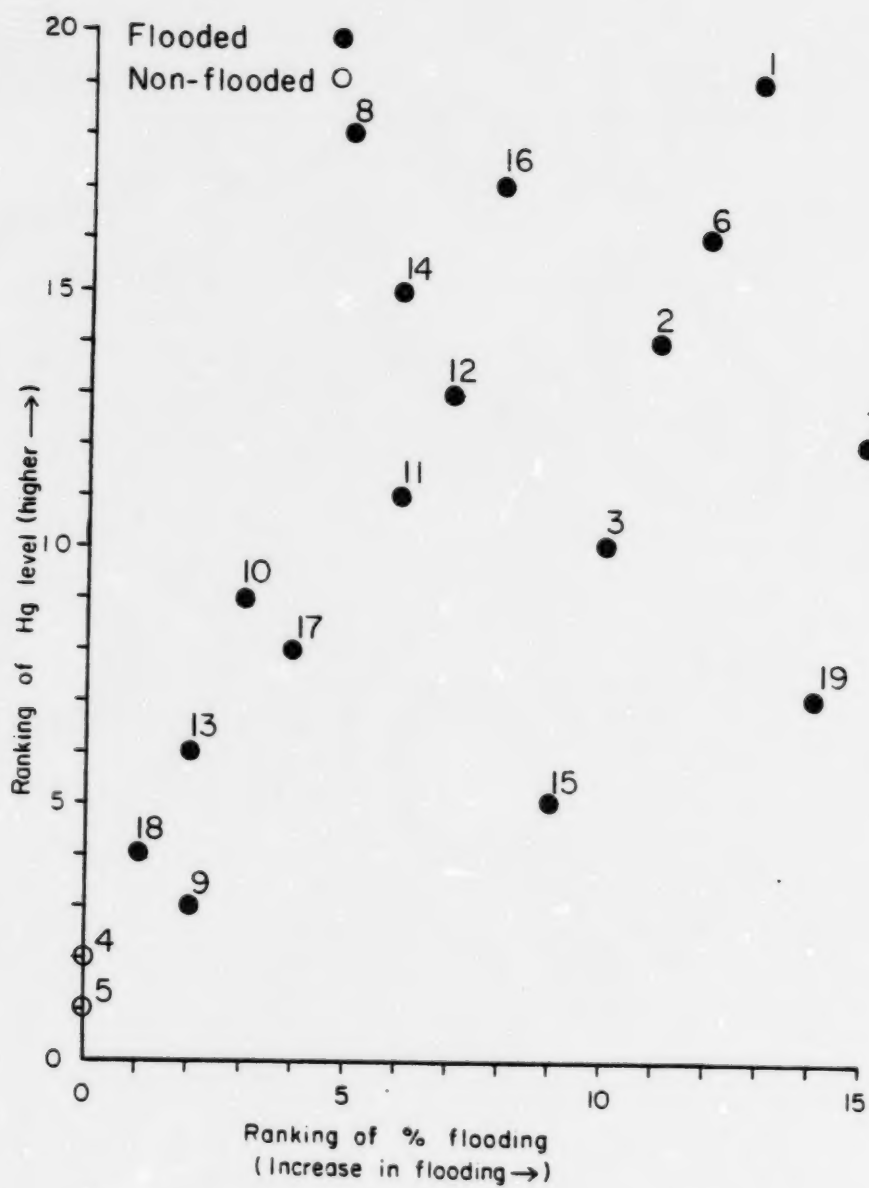


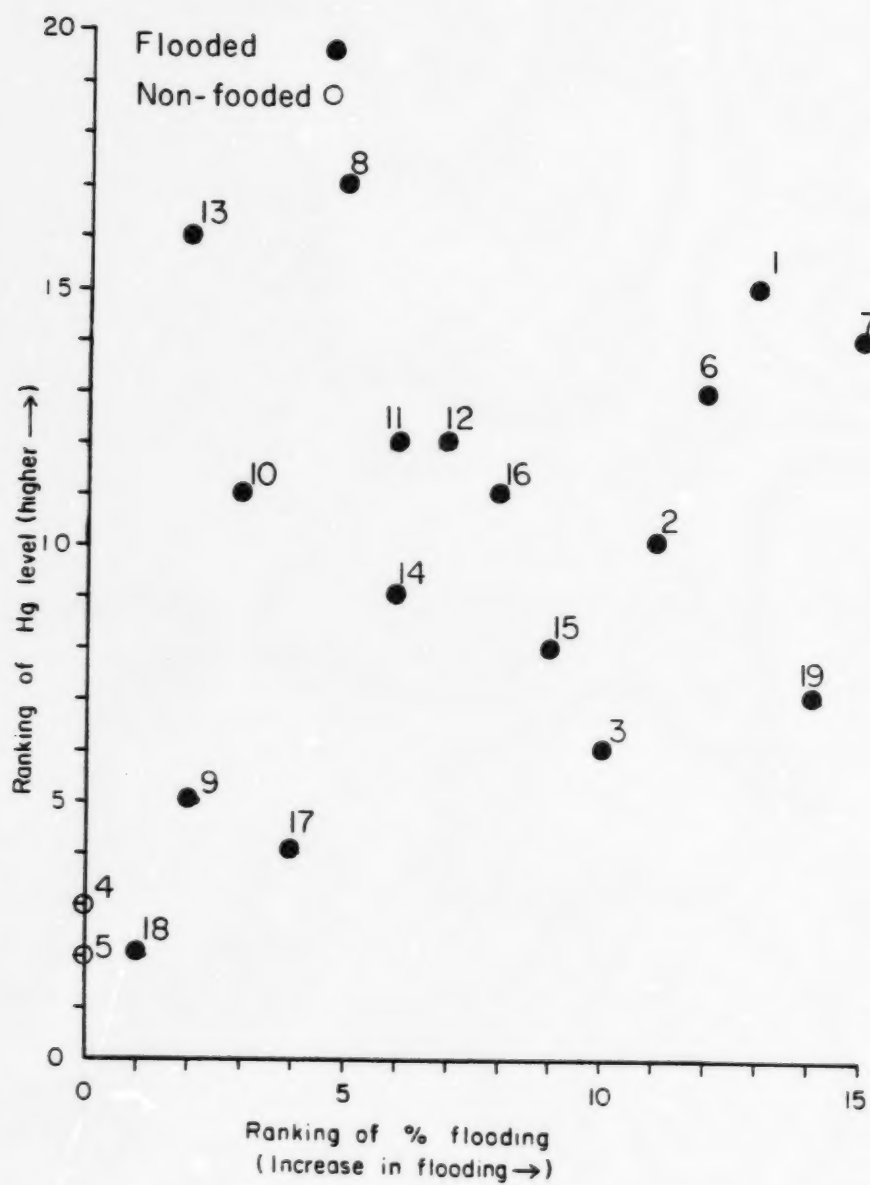
Appendix 17. Comparisons between ranking the amount of flooding and increasing muscle Hg levels of whitefish, walleye and northern pike information collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.

<u>Lake name</u>	<u>reference no.</u>
Karsakuwigamak	1
Pemichigamau	2
Mynarski	3
Costello	4
Suwannee	5
Rat	6
Notigi	7
Wapisu	8
Macheewin	9
Osik	10
Footprint	11
Threepoint	12
Wuskwatim	13
Birch Tree	14
Mystery	15
Apussigamasi	16
Sipiwesk	17
Split	18
Stephens	19



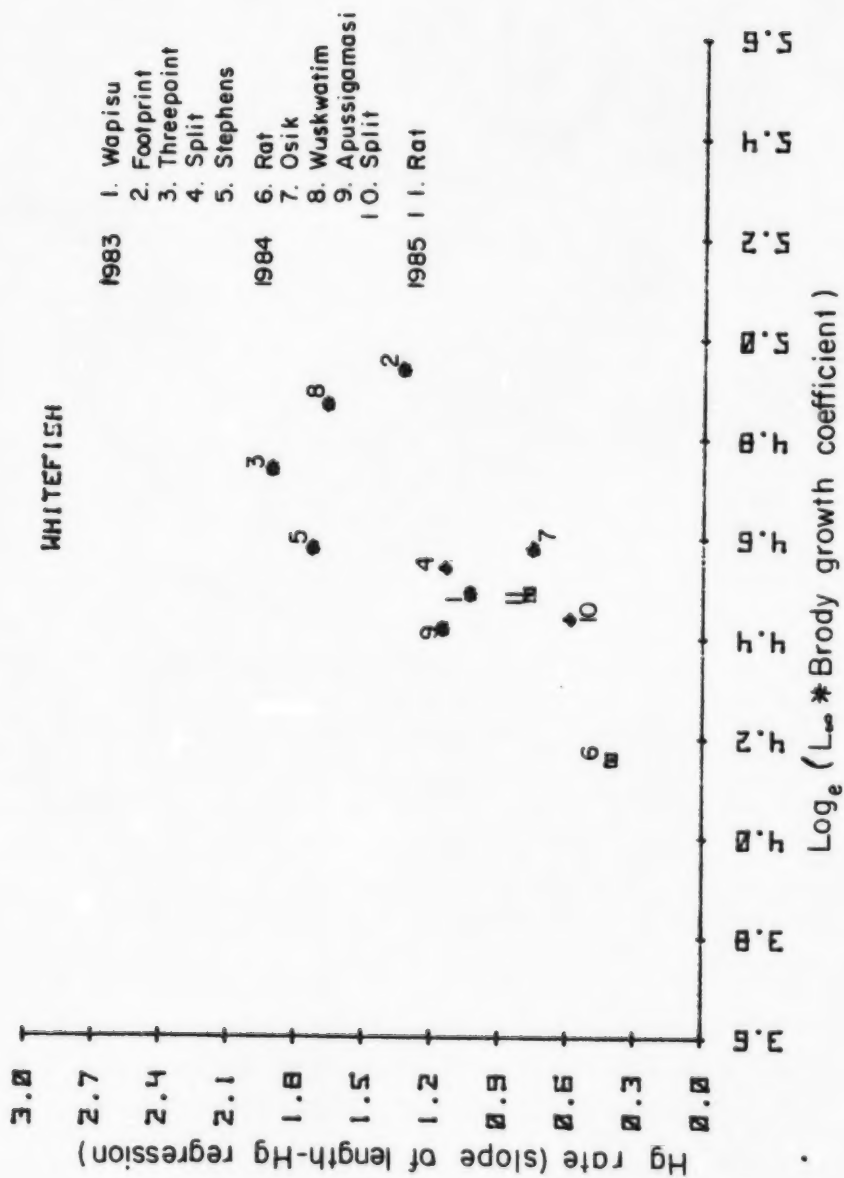
Whitefish

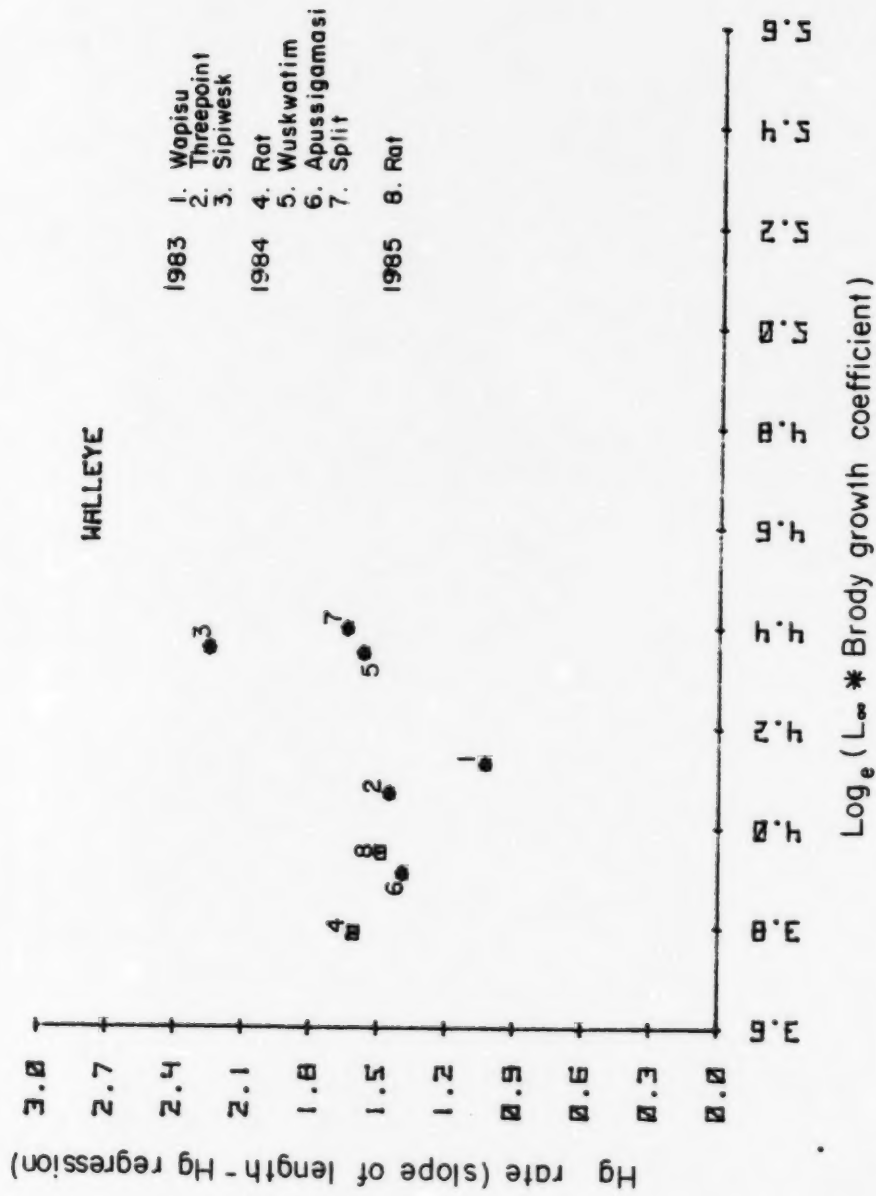


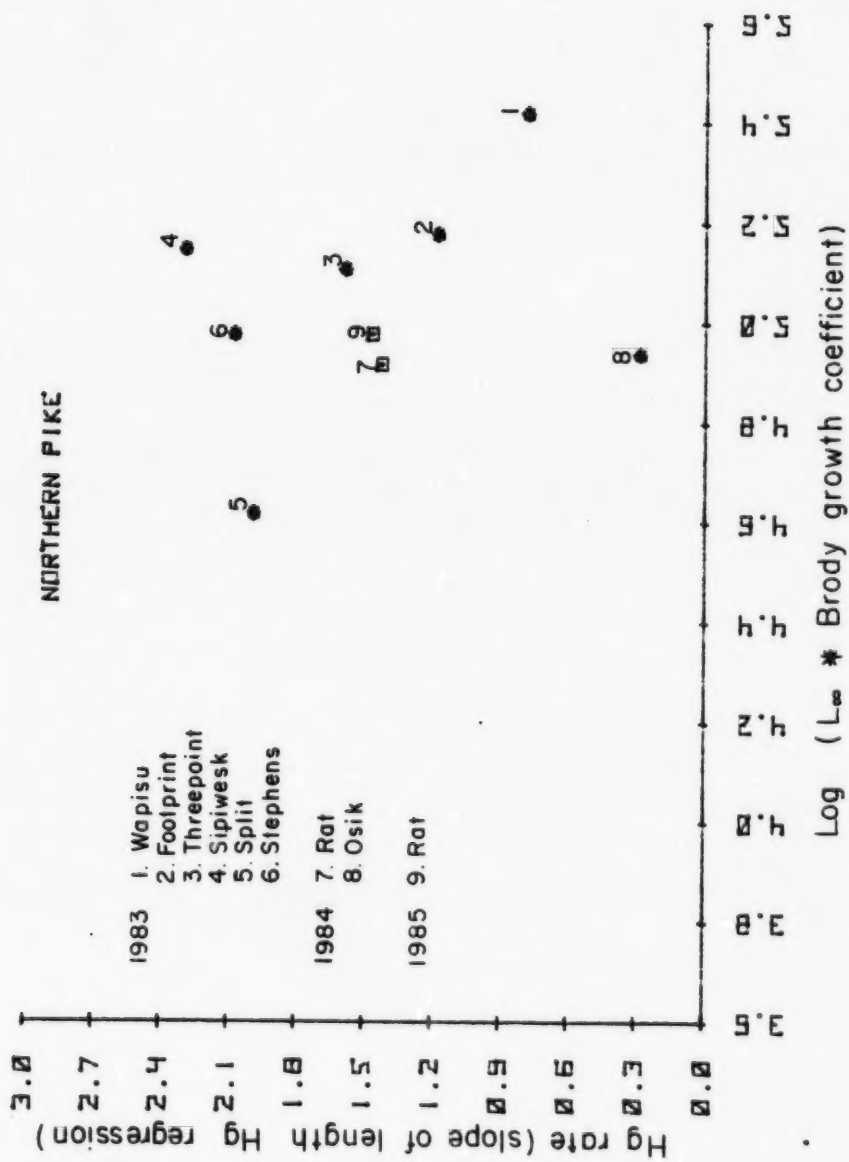


Northern pike

Appendix 18. Growth rate influences on muscle Hg accumulation rates of whitefish, walleye and northern pike data collected from lakes studied under Project 3.3 of the Canada - Manitoba Mercury Monitoring Agreement, 1983 - 1985.







Appendix 19. Relationship between liver and muscle Hg levels ($\mu\text{g}\cdot\text{g}^{-1}$) of whitefish, walleye and northern pike data collected from the Rat - Burntwood River System lakes, 1983 - 1985.

Rat Lake.

Year	Length Interval	n	Muscle		Liver		Ratio		
			min	Hg	max	Hg			
Whitefish									
1984	100 - 149	2	0.17	0.19	0.20	0.33	0.40	0.47	2.11
	150 - 199	3	0.18	0.19	0.19	0.29	0.40	0.46	2.11
	200 - 249	1	0.21	0.21	0.21	0.40	0.40	0.40	1.90
	250 - 299	3	0.18	0.21	0.23	0.29	0.43	0.51	2.10
	300 - 349	6	0.07	0.22	0.34	0.11	0.44	0.89	2.00
	350 - 399	2	0.27	0.32	0.36	0.69	0.79	0.88	2.47
	400 - 449	2	0.18	0.20	0.22	0.27	0.31	0.35	1.55
Walleye									
1984	50 - 99	2	0.29	0.38	0.49	0.37	0.49	0.60	1.29
	150 - 199	1	0.46	0.46	0.46	0.31	0.31	0.31	0.67
	200 - 249	7	0.43	0.61	0.83	0.33	0.47	0.88	0.77
	300 - 349	7	0.88	1.54	2.23	0.60	1.75	3.54	1.14
	350 - 399	2	1.67	1.69	1.71	1.69	1.79	1.88	1.06
	450 - 499	1	2.84	2.84	2.84	5.40	5.40	5.40	1.90
Northern pike									
1984	300 - 399	5	0.38	0.90	2.09	0.44	1.32	4.39	1.47
	400 - 499	3	0.78	0.92	1.11	0.74	1.27	1.73	1.38
	500 - 599	3	1.46	1.73	2.10	1.41	2.36	3.51	1.36
	600 - 699	6	1.52	2.14	3.25	1.67	3.88	5.09	1.81
	700 - 799	1	1.63	1.63	1.63	2.37	2.37	2.37	1.45
	900 - 999	1	3.75	3.75	3.75	8.22	8.22	8.22	2.19

Footprint Lake whitefish.

Year	Length interval	n	Muscle			Liver			Ratio
			min	Hg	max	min	Hg	max	
1980	300 - 349	3	0.18	0.20	0.21	0.23	0.27	0.33	1.35
	350 - 400	1	0.30	0.30	0.30	0.44	0.44	0.44	1.47
1983	150 - 199	1	0.13	0.13	0.13	0.42	0.42	0.42	3.23
	200 - 249	1	0.09	0.09	0.09	0.18	0.18	0.18	2.00
	250 - 299								
	300 - 349	3	0.06	0.09	0.11	0.06	0.10	0.14	1.11
	350 - 399	13	0.10	0.15	0.24	0.14	0.26	0.48	1.73
	400 - 449	7	0.23	0.30	0.48	0.28	0.48	0.76	1.60
1984	200 - 249	3	0.04	0.07	0.09	0.10	0.18	0.22	2.57
	250 - 299	4	0.04	0.07	0.09	0.13	0.15	0.18	2.14
	300 - 349	6	0.03	0.08	0.15	0.10	0.21	0.44	2.62
	350 - 399	6	0.04	0.09	0.11	0.11	0.21	0.27	2.33

Footprint Lake walleye.

Year	Length interval	n	Muscle			Liver			Ratio	
			min	Hg	max	min	Hg	max	mean liver Hg	Mean muscle Hg
1978	300 - 349	2	0.73	0.76	0.78	0.52	0.59	0.66		0.78
	350 - 399	12	0.70	0.87	1.17	0.29	0.56	1.02		0.64
	400 - 449	6	0.91	1.27	2.61	0.46	0.91	2.05		0.72
1980	300 - 349	1	1.50	1.50	1.50	0.69	0.69	0.69		0.46
	350 - 399	3	0.73	0.94	1.05	0.31	0.47	0.65		0.50
	400 - 449	2	1.43	1.58	1.72	0.75	0.76	0.77		0.48
1983	200 - 249	2	0.53	0.57	0.60	0.36	0.42	0.47		0.74
	250 - 299	2	0.64	0.93	1.21	0.32	0.67	1.01		0.72
	300 - 349	6	0.56	0.84	1.05	0.49	0.68	0.97		0.81
	350 - 399	7	0.36	1.07	1.63	0.25	0.86	1.57		0.80
	400 - 449	7	1.34	1.55	1.85	0.95	2.08	3.32		1.34
1984	150 - 199	1	0.52	0.52	0.52	0.48	0.48	0.48		0.92
	200 - 249	6	0.31	0.36	0.43	0.28	0.35	0.45		0.97
	250 - 299	-								
	300 - 349	-								
	350 - 399	7	0.97	1.17	1.58	0.74	1.03	1.68		0.88
	400 - 449	5	1.11	1.35	1.50	0.50	1.00	1.36		0.74

Footprint Lake northern pike.

Year	Length interval	n	Muscle		Liver		Ratio	
			min	Hg	max	min	Hg	max
1978	400 - 499	17	0.44	0.70	0.90	0.28	0.51	0.86
	500 - 599	1	0.72	0.72	0.72	0.54	0.54	0.54
1980	400 - 499	1		1.13		0.82	0.82	0.82
	500 - 599	2		1.31		0.95	2.16	3.37
	600 - 699	1		1.06		1.13	1.13	1.13
1983	300 - 399	7	0.45	0.83	1.38	0.55	0.92	1.44
	400 - 499	8	0.74	1.01	1.37	0.78	1.27	2.08
	500 - 599	6	0.46	1.40	1.67	0.26	2.10	4.62
	600 - 699	4	0.89	1.77	2.22	1.25	2.72	3.69
1984	300 - 399	8	0.45	0.62	0.85	0.29	0.45	0.65
	400 - 499	7	0.38	0.87	1.09	0.37	0.87	1.44
	500 - 599	4	1.13	1.46	2.02	0.97	1.92	2.67
	600 - 699	1	3.59	3.59	3.59	5.62	5.62	5.62

Threepoint Lake whitefish.

Year	Length interval	n	Muscle			Liver			Ratio
			min	Hg	max	min	Hg	max	
1980	350 - 399	1	0.52	0.52	0.52	0.91	0.91	0.91	1.75
	400 - 449	3	0.34	0.35	0.37	0.61	0.70	0.87	2.00
	450 - 499	1	0.38	0.38	0.38	0.64	0.64	0.64	1.68
1983	250 - 299	2	0.11	0.13	0.15	0.26	0.27	0.27	2.08
	300 - 349	6	0.12	0.19	0.23	0.20	0.34	0.46	1.79
	350 - 399	12	0.10	0.24	0.33	0.18	0.42	0.62	1.75
	400 - 449	5	0.26	0.36	0.56	0.39	0.69	1.11	1.92

Threepoint Lake walleye.

Year	Length interval	n	Muscle			Liver			Ratio
			min	Hg	max	min	Hg	max	
1980	350 - 399	2	1.16	1.49	1.81	0.62	0.93	1.23	0.62
	400 - 449	2	1.30	1.46	1.62	0.81	0.93	1.05	0.64
	450 - 499	1	1.54	1.54	1.54	0.65	0.65	0.65	0.42
1983	150 - 199	3	0.41	0.45	0.47	0.09	0.20	0.33	0.44
	200 - 249	4	0.55	0.75	1.16	0.14	0.36	0.54	0.48
	250 - 299	3	0.88	1.01	1.23	0.47	0.70	0.95	0.69
	300 - 349	-							
	350 - 399	4	1.38	1.56	1.69	1.39	1.66	1.93	1.06
	400 - 449	9	1.38	1.84	2.48	1.24	1.93	3.22	1.05
	450 - 499	2	1.71	1.97	2.20	1.88	1.95	2.02	0.99

Threepoint Lake northern pike.

Year	Length interval	n	Muscle			Liver			Ratio
			min	Hg	max	min	Hg	max	
1980	600 - 699	3	0.92	1.40	2.08	1.04	1.82	3.05	1.30
	700 - 799	2	0.71	0.85	0.98	0.49	0.71	0.93	0.84
1983	200 - 299	5	0.35	0.73	1.94	0.24	0.80	2.85	1.10
	300 - 399	4	0.86	1.03	1.29	0.80	1.13	1.32	1.10
	400 - 499	6	1.27	1.49	1.75	1.44	2.16	3.03	1.45
	500 - 599	6	1.40	1.75	2.06	1.51	2.57	5.37	1.47
	600 - 699	2	1.65	1.92	2.18	2.31	2.88	3.45	1.50
	700 - 799	1	2.55	2.55	2.55	2.46	2.46	2.46	0.96

Split Lake.

Year	Length interval	n	Muscle			Liver			Ratio
			min	Hg	max	min	Hg	max	
									mean liver Hg/mean muscle Hg
Whitefish									
1984	150 - 199	1	0.06	0.06	0.06	0.03	0.03	0.03	0.50
	200 - 249	2	0.05	0.05	0.05	0.01	0.03	0.05	0.60
	250 - 299	1	0.07	0.07	0.07	0.11	0.11	0.11	1.57
	300 - 349	10	0.04	0.06	0.08	0.02	0.08	0.13	1.33
	350 - 399	3	0.06	0.07	0.13	0.08	0.10	0.13	1.43
	400 - 449	2	0.05	0.08	0.10	0.07	0.10	0.13	1.25
	450 - 495	1	0.11	0.11	0.11	0.17	0.17	0.17	1.55
Walleye									
1984	150 - 199	1	0.19	0.19	0.19	0.09	0.09	0.09	0.47
	200 - 249	1	0.11	0.11	0.11	0.08	0.08	0.08	0.73
	250 - 299	4	0.19	0.21	0.24	0.09	0.13	0.19	0.62
	300 - 349	5	0.23	0.42	0.89	0.07	0.23	0.57	0.55
	350 - 399	12	0.26	0.42	0.62	0.12	0.23	0.31	0.55
	400 - 449	9	0.31	0.49	0.81	0.17	0.28	0.41	0.57
	450 - 499	1	0.82	0.82	0.82	0.89	0.89	0.89	1.09
Northern pike									
1984	300 - 399	3	0.12	0.14	0.16	0.10	0.12	0.13	0.86
	400 - 499	4	0.19	0.29	0.54	0.07	0.17	0.32	0.59
	500 - 599	7	0.22	0.34	0.58	0.15	0.25	0.52	0.74
	600 - 699	2	0.34	0.36	0.38	0.19	0.28	0.36	0.78
	700 - 799	4	0.38	0.45	0.61	0.20	0.32	0.65	0.71